THE FINANCIAL Analysts Journal

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IN OUR JANUARY-FEBRUARY ISSUE

Canada and the United States: An Industrial and Stock Market Forecast, by John A. Boyd, Jr., Andras, Hatch & McCarthy, Toronto; How News Affects Market Trends, by Joseph Mindell, partner, Marcus & Co., New York; and a Summary of Proceedings of The St. Louis Society of Financial Analysts' Regional Convention.

THIS IS GEN TEL

New ideas in photography are old business at Argus Cameras, a part of General Telephone & Electronics.

Long a major producer of 35mm cameras, Argus last year extended its line with two new 8mm movie cameras, and a new 8mm movie projector that gives the brilliant performance of 750 watts while using only 150 watts of power.

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Today, General Telephone & Electronics brings together the talents of many people and the facilities of many companies—all working to advance communications through sight and sound.

By developing new methods and new products for home and industry, Gen Tel is working for what it believes is bound to be: a growing future in a growing America.

Focus on new ideas

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GENERAL TELEPHONE & ELECTRONICS

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GENERAL SYSTEM

The "Cold Box" (engineers' term for insulated air reduction unit) is where air is liquefied and pure oxygen distilled off for use in chemical production with natural petroleum gases.

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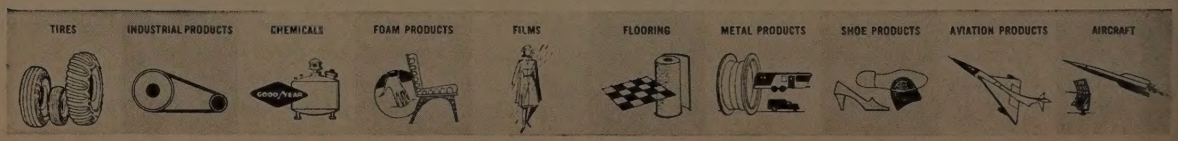
Before a twelve-hour countdown begins, before the thin air of the stratosphere closes about the returning voyager, Goodyear imagination, research and development have been at work—protecting the travel of tomorrow.

Lots of good things come from

GOODYEAR



THE FINANCIAL
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San Francisco Analysts to Probe Hawaiian Economy

Hawaii's industry and agriculture are slated to undergo a thorough fact-finding examination, early next year, by a group of Financial Analysts from our San Francisco Society.

San Franciscans are geographically the 50th state's nearest neighbors. Historically, "Bagdad-on-the-Bay" has been and still is closely oriented commercially and socially with the Hawaiian Islands. And the San Francisco Society's visit may cement even closer ties.

For most of us, mention of Hawaii conjures up visions of swaying palm trees and comely Hula girls; of golden pineapples and sweet sugar cane; of an edible and nutritious "library paste" called *poi;* of coral reefs and surf-washed sands; and (naturally) of Waikiki Beach. On the other hand, the more sophisticated may also think of Hawaii in terms of Kamaainas (sons of the soil); of Malahinis (newcomers) and Haoles (white men); of Kona coffee and Macadamia nuts; of Koa trees and monkeypod; and of the Kamehameha Schools for boys and girls of Hawaiian blood.

However, all these "trade marks" only serve to suggest a certain breadth and depth of Hawaii, and the countless ways in which the "Paradise of the Pacific" differs from all other 49 states. For, as countless inhabitants and weather-conscious visitors have discovered, Hawaii "has the climate which California and Florida claim to have." Moreover, the 50th state has long enjoyed one of the highest standards of living of any of our states and/or possessions.

Over the years Hawaii (originally called the Sandwich Islands) has been a bastion of free enterprise in the *best* American tradition. But without the ingenuity and perseverance of the business-minded lay missionaries, who accompanied or followed the New England religious-minded emissaries of 130-plus years ago, Hawaii might still be just another remote Pacific atoll.

In the early days of our 50th state its economic life centered around agriculture and fishing. As time went by five major financial groups, having their primary roots in sugar and pineapples, gradually obtained a position of dominance. Then, as Hawaii's economy grew and became increasingly complex, the relative importance of the "Big Five" gradually diminished—a phenomenon common to all civilizations. Once, the "Big Five" accounted for more than 80% of Hawaii's employment; today that percentage has declined to around 14%.

Throughout the intervening years, as the grip of the "Big Five"—once 100% owned by the original founders — became less formidable, some 35,000 new businesses saw the light of day and prospered. Even the "Big Five" became publicly owned, albeit ownership is still concentrated to a somewhat lesser degree in the hands of the founding families. Yet, in the period of industrial transition, the "Big Five" served the Islands well and left their pioneering impact upon Hawaii's economy. Some of their accumulated liquid resources were used to finance new products and new projects.

(*continued on page* 77)

Ten Billion Dollars in Gold!

In connection with B. Barret Griffith's article on "The Gold Flow" in this issue, we wandered over to the offices of The Federal Reserve Bank of New York to obtain a suitable accompanying picture. This was graciously supplied by Paul Meek, a young and affable Ph.D. who is chief of the bank's Public Information Division.

Dr. Meek then took us on an impromptu underground tour (five stories below sidewalk level) to view ten billion dollars in gold bars. The bars sit commandingly on Manhattan Island's granite bedrock in 96 heavy steel cages. Recalling their monetary worth, quite a sight! And we were told that (exclusive of the United States' gold stock) this represents approximately half of the total free world's gold supply.

As we viewed the dust-laden golden hoard our thoughts turned to the rhapsodic observation of an Italian poet, long-since deceased: "beautiful and useless, but a fool has no choice."

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1960 — 1961

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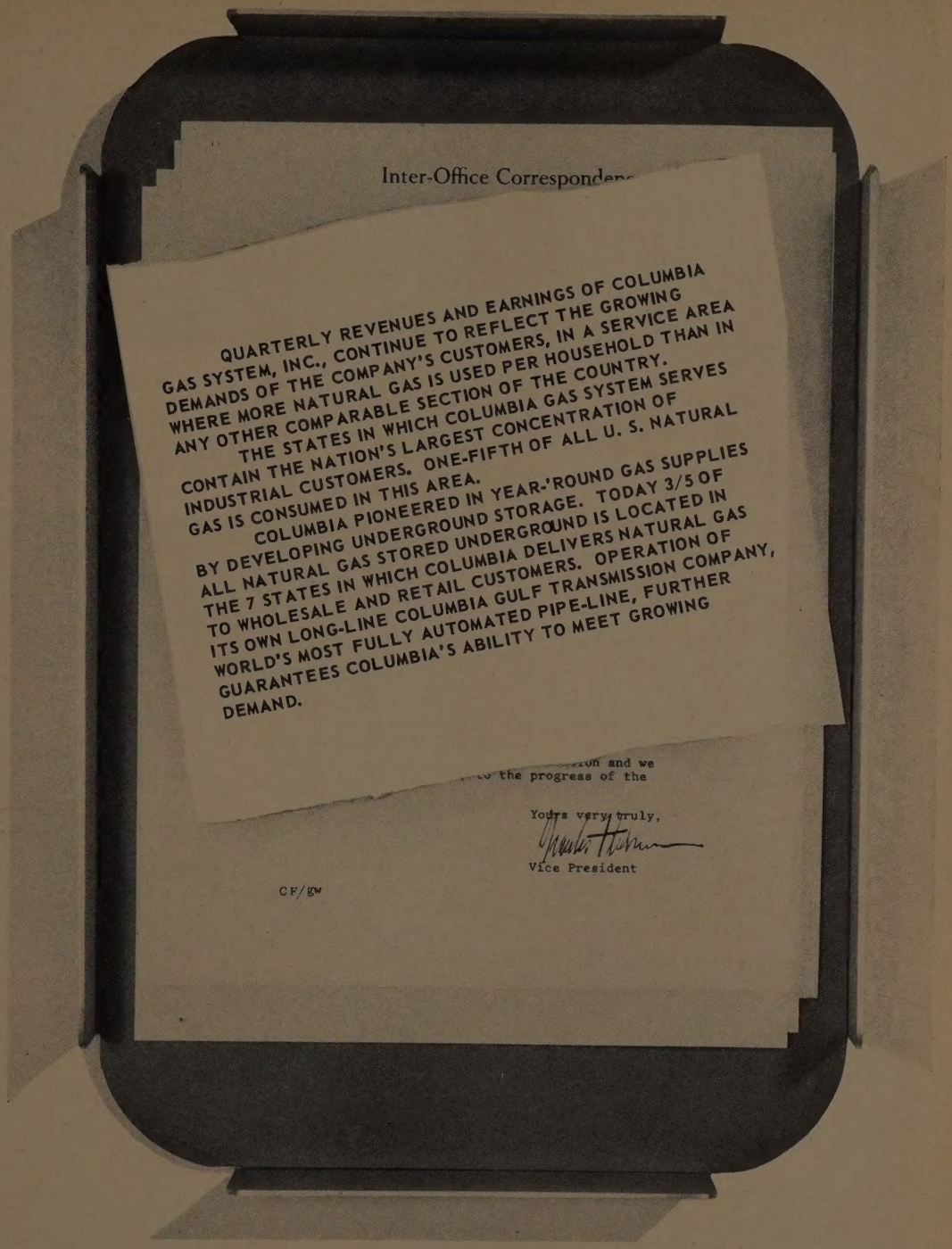

For industrial, commercial and domestic applications, natural gas continues to be the *preferred fuel* in the service territory of Columbia Gas System in Ohio, Pennsylvania, West Virginia, Kentucky, Virginia, Maryland and southern New York.

Here nearly a third of the nation's gas customers live and work. Columbia Gas System service contributes directly to their comfort, convenience and economic advantage.

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EAGLE EP PICHER

EAGLE-PICHER

Manufacturer's Manufacturer

Strength Through Planned Diversificatio

So broad is the scope of
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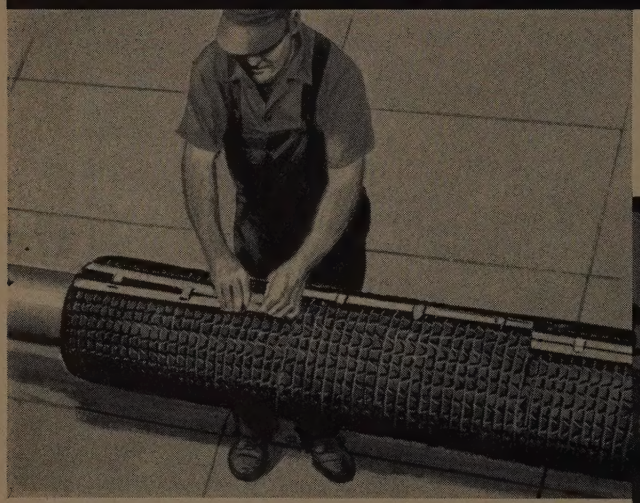
parts produced by Eagle-Pic
that it is likely to include m
of interest to *any* manufactu

Each of Eagle-Picher's prim
divisions, with strategica



INSULATION DIVISION

Just about as handy as a zipper is the Eagle-Picher closure on Tab-Lok pipe covering. Bend three tabs, pull tight and you have a first-class insulating job. Tab-Lok is but one of a complete line of insulations which Eagle-Picher offers in a "manufacturers' department store" of insulation materials and forms.

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To meet customer demand and to provide fast, clos
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located plants. This Eagle-Picher Division supp
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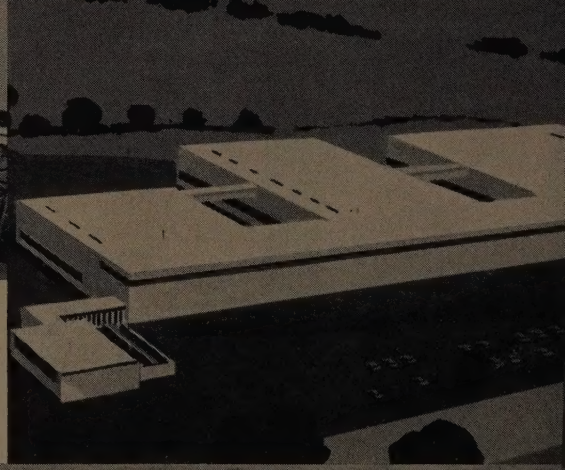

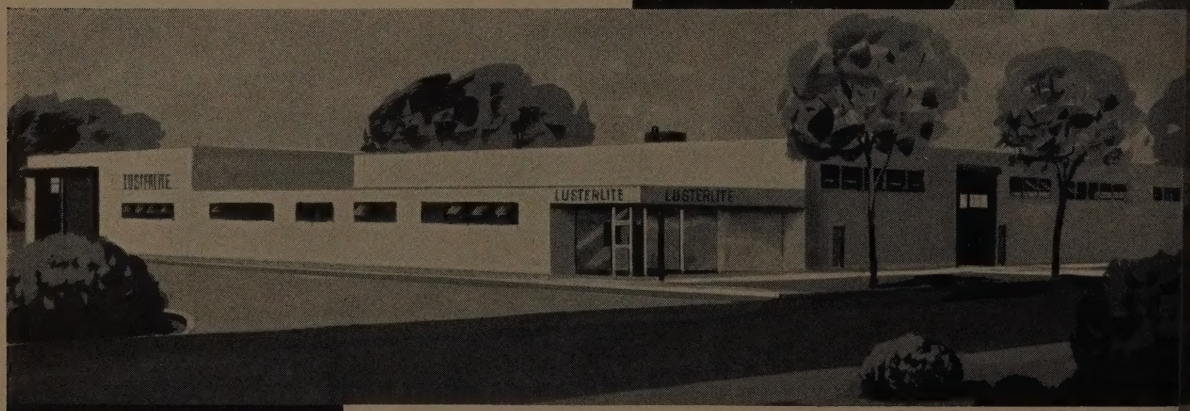

CHICAGO VITREOUS DIVISION

Here is another Eagle-Picher plant . . . this one for the Chicago Vitreous Corporation Division, an important producer of *frits*, a basic material for making porcelain enamel. In this new plant, the Lusterlite Corporation, a subsidiary, produces steel frames for the modern porcelain-enameled service stations which they manufacture and erect.

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nderstanding of *other* manu-
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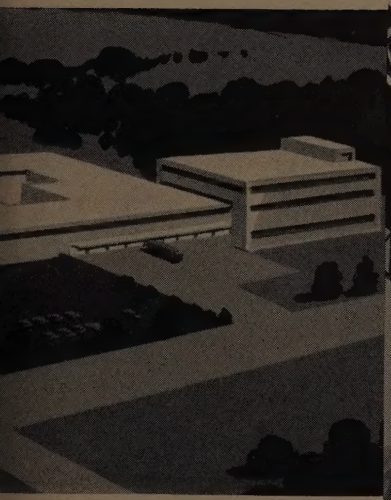

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Permox 1-4-3 provides paint manufacturers with an effective, easily-tinted, anti-corrosive pigment for all three paint coats—primer, intermediate and finish. This is but one among dozens of outstanding zinc and lead compounds and rare metals from Eagle-Picher's Chemicals and Metals Division.

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Telephone service has never been so fast, convenient and dependable as it is today

...and it's going to be better!

Two words—*growth and change*—describe major trends in the Bell telephone business. There is more of every kind of service for more people. And more and more new things are coming along all the time.

Direct Distance Dialing is bringing a new era of speed and convenience in Long Distance calling.

Nearly 24,000,000 customers can now dial Long Distance calls direct to 39,000,000 telephone numbers in the United States and Canada.

New underseas cables make it easy to talk across oceans as clearly as a call across town.

An entirely new era in communications for business is being opened up by the Bell System's Data-Phone service. It enables electronic business machines to "talk" to each other over regular telephone lines. Some day there may be more of those calls than calls between people.

Those are some of the new services. Just a few of the other newer things are shown on the right.

There's much more to come . . . from research and development, from the investment of millions of dollars of new capital, and from the Bell System's never-ending desire to give you the best and the most telephone service in the world.

CALL DIRECTOR TELEPHONE

With the touch of a button you can connect other office telephones, set up interoffice conference calls, add other office extensions to incoming calls. Two models. 18 and 30 push buttons. Many thousands already in service.

THE PRINCESS

It's little! It's lovely! It lights! A new compact extension telephone for any room in the house. A tremendous success all over the country. Available in white, beige, pink, blue and turquoise.

BELLBOY SERVICE

One of the newest Bell System services. A person away from the telephone hears a tone signal (sent from the telephone exchange) on a pocket radio receiver. Alerts him to call his home or office to get a message. Now available in 14 major cities.

HOME INTERPHONE

Lets you call any other room in the house that has a phone. Or switch outside calls to another phone. Also lets you answer the door from any phone. Microphone in telephone and speaker on wall beside each telephone enable person in other room to talk back without lifting receiver. Will be available nationally next year.

BELL TELEPHONE SYSTEM

Communications in a Changing World

by Donald C. Power

HARDLY MORE THAN A FEW MONTHS AGO, the American communications industry made news that reaped headlines around the world. A team of scientists succeeded in sending "Echo I," a 100-foot balloon satellite, into outer space. They then were able to bounce voice messages off the balloon's metallic surface. Though Echo itself is highly experimental, the balloon may well lead to the day when intercontinental telephone calls and even television shows will be relayed around the world by teams of satellites in outer space.

Then, just a few weeks ago, another communications satellite was launched. This was a 500-pound Courier —and, like Echo, it was the forerunner of a space system for fast, world-wide communications.

Echo and the Courier satellites were, in a sense, the latest dramatization of the basic changes that even now are sweeping the telephone industry. No longer can the typical company merely operate groups of telephones strung together by wires and poles. New methods of transmission are entering the industry. Many electronics techniques—particularly radio—are already being extensively used, and there are many possibilities for bringing still other applications of electronics into telephone operations. Memory systems and electronic switching, for example, are a blend of the 85-year-old telephone and the brand new science of electronics.

In the case of General Telephone & Electronics, this change was vital and far-reaching enough for us to make a major acquisition in order to participate in the growth which we see coming from it. That was Sylvania Electric Products, which we acquired in March, 1959. Our new position in electronics points up just how closely this industry has become related to the telephone: GT&E now is one of the nation's largest electronics companies, ranking as one of the two largest manufacturers of electronic tubes and among the top ten in the production of semi-conductor devices.

But the advent of electronics in the telephone business also has brought with it a new concept for the industry. Its operations cannot center solely around the telephone. The truly growth-minded company now must be in the general field of *communications.* For its business, more and more, is coming to consist of three separate and distinct parts: *oral,* or the regular telephone service as we have always known it; *visual,* the use of television or other type of picture in communications; and the extremely promising field of transmitting various types of *written data,* either for industry or, eventually perhaps, for private use.

Explosive Possibilities Seen

All three of these fields are currently making huge technological strides. And all three of them appear to hold explosive possibilities for the future growth of the nation's telephone companies.

Data communications alone, for example, could open up a whole new field of operations and revenues. Consider one important fact. Today, America's total telephone plant of $28.3 billion lies virtually idle during the six hours when private subscribers are asleep and factories and business offices are closed. For many types of industry, however, vital data can be carried over telephone lines during those very hours. In effect, then, telephone plants will be able to compile revenues for its stockholders on a twenty-four-hour-a-day basis.

Before we go any deeper into the subject, however, it may be well to first examine the American telephone industry itself. The largest company in the field is, of course, the American Telephone & Telegraph Co. AT&T's well-known Bell System of 23 operating companies has some 60 million telephones on its lines.

The nation's other telephones are operated by the independent telephone industry; General is its largest member. At the present time, we have 26 operating companies, with four million telephones. These phones serve more than 11 million people in roughly 5,500 communities located in 31 states.

The other companies in the independent telephone system should not be overlooked in any appraisal of the industry. All told, they number 3,560 operating companies, with 10.8 million telephones (including our own) on their lines. In effect, then, one out of every seven telephones in the United States, including its territories and possessions, is owned and operated by an independent company. Those companies, incidentally, serve twice as many communities in the United States as the Bell System, though the Bell companies operate in most of the larger metropolitan areas.

Some of these companies are small, perhaps operated by a husband and wife team who may man a switchboard in their own home. Others are quite large and fully modernized with automatic (dial) telephone service. No less than 100 of them grossed over $1 million each last year.

No matter how large or small, though, all these companies are interconnected with the Bell System, and all

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Donald C. Power became Chairman of the Board and Chief Executive Officer of General Telephone & Electronics Corporation in 1959. He had been President of General Telephone Corporation since 1951, having served previously as a Director of the Corporation. He was associated with General's Ohio subsidiary for many years as Legal Counsel and Director. In addition to being a Director of the Corporation and several of its subsidiaries, Mr. Power is also a Trustee of the Committee for Economic Development, as well as a member of the National Industrial Conference Board.

the other independent telephone companies. Their subscribers, then, can make calls to any part of the nation. The long distance wires, for example, are operated mostly by the Bell System, but calls originating, or ending in independent territory, are carried over them. Similarly, the Bell company in Los Angeles is almost completely surrounded by a General company, but Los Angeles residents have no trouble making calls which must travel through General territory.

Phone Rings on the March

Since the end of World War II, many independent telephone companies have been in a strong growth trend, with total telephone revenues doubling over that period. There were two reasons for this growth. First, the number of Americans wanting telephones increased sharply. Second, subscribers are making more and more calls on those phones. In 1949, for example, there were 40.6 million telephones in this country, over which 132 million calls a day were made. By last year, the total number of phones had increased to 70.8 million, and Americans were averaging 208 million calls a day on them.

Despite this growth, there still remains an estimated 10 million households in the United States which are without telephones. That is a figure, of course, roughly equal to the size of the independent telephone industry today. Added to that, the expansion of our population and the increasing number of new family formations expected during the 1960s will bring still another increase in the demand for our services.

Certain parts of North America, it should be noted, are expected to show faster than average growth in the demand for telephones. General Telephone, to illustrate, has major operating properties in California, Florida and British Columbia where demand already is moving well ahead of the averages.

But, though the figures on our future demand are bright, the industry is not sitting back and waiting for orders to come. With costs rising sharply in the past few years, it has been necessary for telephone companies to find new ways to lower their own costs. Now, that same research is going forward, not only to lower expenses but to find new ways to increase and improve our services. And it is these programs which are enabling the telephone companies to move into the broader field of communications—with its emphasis on visual and data transmission as well as on carrying oral messages over the telephone.

Before citing the actual advances being made, it should be noted that telephone companies are in an extremely favorable financial position to underwrite large research programs of this type. That is largely because of the stable nature of telephone operations. Of General's estimated gross revenues and sales of $1.2 billion this year, roughly two-thirds will come from manufacturing and one-third from the telephone business. Telephones, however, will contribute roughly 55% of our net profit, against only 45% from manufacturing.

With that profit mix, then, the company can fund a large research program. It can do so, moreover, with no fear of large segments of its business suddenly being affected by an industrial turn-down in the fashion of, say, a more volatile manufacturing company.

As a result, a considerable amount of research now is being done in communications. American Telephone & Telegraph, by way of example, operates its well-known Bell Laboratories. And General Telephone now has no less than 3,000 scientists and engineers working in 27 laboratories to find new and better ways in communications. The output of their labor—whether in electronics or telephones—will be produced by our own wholly-owned subsidiaries, including Sylvania, Automatic Electric (which makes a wide variety of telephone equipment) and the Lenkurt Electric Co.

Invention of the Dial Phone

How great a change can the laboratories bring to communications? The best example comes from a technological revolution which only now has reached its peak. Interestingly, it is one which came about because the customer of a Kansas City, Missouri, businessman named Almond Strowger got a wrong number well before the turn of the century.

Strowger learned about the call, and also found that his own line had been free when the operator reported a "busy" to the caller. Strowger was so angry that he set out to change the whole system of calling. Armed only with a pencil, a paper of pins and an old round collar box, he determined to invent a system which would do away with "Central" and enable the subscriber to make his call directly.

By 1889, Strowger was able to apply to the Government for a patent on his system. What he had invented was the automatic (dial) telephone. Basically the system consisted of a series of push buttons which enabled the caller to "punch out" the number of the telephone he wished. By 1895, the Strowger system had been equipped with a dial, which was very much like the one in use today. The company which Strowger founded to make this device, incidentally, was the forerunner of our own Automatic Electric, which remains today one of the biggest manufacturers of dial telephone equipment in the world.

Up to now, the biggest task of the nation's telephone companies has been to change their equipment over to this system. It has been an enormous task. Many independent companies, for example, were unable to afford the cost of dial conversion, or were unable to obtain the necessary financing.

Much of General Telephone's own growth has come about because of this factor. General was able to obtain many of these companies at reasonable prices — two major acquisitions in 1955 and 1957 alone added about 900,000 telephones to our lines — and then use our larger capital resources to change them over to dial.

In former years, our objective was to make our telephone system 90% dial-operated. Now we have gone beyond that, and most of our operating companies are

close to being 100% dial-operated. To achieve this goal, of course, we have had to raise large amounts of capital, spending one billion dollars to modernize and expand our telephone facilities over the past five years.

But it must be remembered that telephone companies, like most other utilities, receive at least one important benefit when they spend so heavily. These expenditures raise their capital rate base, which in turn increases the size of the return which the various regulatory commissions allow them. Our own large construction programs of recent years, for example, partially explains why 55% of our profits today come from telephone operations.

New Techniques Are Rapid

But now that many telephone companies have converted nearly all their facilities to dial operation, the industry is ready for the next step in its continuing technological revolution. Where — in those fields of oral, visual and data communications — will it come first?

New developments are coming so fast in all these fields that it is difficult to say. Consider the impact of the transistor alone on the telephone. Briefly put, the transistor is a recently developed product which is smaller than the vacuum tube but can perform its tasks far better. At the present time, transistors are being used largely to route long distance telephone calls automatically and to amplify phone calls.

But the use of the transistor in telephone operations is broadening every day, and bringing with it added benefits for the telephone companies. Two of its important advantages are that it requires far less room than the vacuum tube, and it can handle telephone calls at a much faster rate. That combination means that telephone companies no longer will need as many lines to handle the same number of calls, or as much space to store the equipment. So the transistor can bring large savings to the industry—savings which it may well be able to pass along to its subscribers and shareholders alike.

Sometime in this decade it is likely that the transistor will enable the industry to go into the all-electronic switching of its calls. This system, which will be smaller and less elaborate than those now in use, will have a permanent and a temporary "memory" and the ability to use logic. It will, for example, remember a number you often call, and make that call if you simply dial "1." The system also will keep track of all the long distance calls you make, thus bringing important savings in the large billing charges now being incurred by the telephone companies.

While this may sound like a "blue sky" development, it really is not. That, perhaps, is the most amazing part of the changes now sweeping the world of communications. Most of the newest developments are virtually with us.

At our Automatic Electric plant at Northlake, Illinois, for insurance, we already have built a 100-line electronic switching center. The system works well, but it is still relatively costly. As a result, we now are concentrating on a semi-electronic system. But we do not think the day is too far off when the entire industry will swing over to electronic switching.

Semi-conductor devices—transistors, diodes and the like—would seem destined to play a very large part in our future. Briefly and simply put, the transistor, for example, is a device which amplifies and switches electric current, and in some applications, can be made to change the nature of that current. There are many present applications for these devices, but they have even greater promise for the future.

While semi-conductors do replace some types of tubes, it should be noted that General's Sylvania division does not believe that they will reduce its own tube production. There are still many areas of electronics where tubes remain more efficient than semi-conductors, and large markets continue to exist for specialized tubes of all types.

From an investment point of view, the savings that progress can bring are extremely impressive. Consider the new Time Assignment Speech Interpolation system. Despite its forbidding designation, this is a system which takes advantage of the short pauses which occur in all telephone conversations.

TASI equipment, operating in about one-millionth of a second, searches out a temporarily idle path between two talkers and connects that path with someone just starting to talk. All parties on the line, of course, are not aware that TASI is at work. But this new system already has doubled the capacity of one of the trans-Atlantic telephone cables to Europe, enabling it to handle 84 conversations at once.

All these steps, needless to say, are on the operating side of the telephone business. On the consumer side the industry is preparing for equally wide-ranging changes. Until recently, of course, telephone men everywhere were hard-pressed just to keep up with the demand for new telephones. Now, the emphasis is changing.

The industry today is *merchandising* the telephone. It is following a course much like that used by the makers of small appliances. New types of telephones are being introduced and more versatile models are constantly being developed. The comparatively recent introduction of telephones in color—in red, green, white and other colors, rather than the traditional black—was the first step in this program.

This campaign has been extremely successful. Many subscribers actually have added new telephones to their homes simply because they were in color and fit in with the harmony of a room. To illustrate just how widespread the acceptance of these colored models has

become, one newspaper recently carried the news that Eskimos in Alaska may soon be using pink telephones.

The aim of this program, of course, has been to increase the number of phones in the American home. To preserve the momentum of this drive, the industry now is developing specialized telephones. That is, phones designed to fit in the bedroom, the living room, the kitchen and similar specialized locations. The kitchen phone, as an illustration, will enable the housewife to speak into it from any part of the room, without having to use her hands. Such an instrument, we believe, will "sell" itself.

Sometime later this year, as another example, General Telephone will introduce a new phone, the "Starlite," which is one-third smaller than the average telephone and is equipped with a night light. This model was developed after a poll of our subscribers showed that they wanted a phone specially designed to fit on the night table by the bed. The Bell System has a similar model called the "Princess."

Just how many phones can we hope to put in the American home?

This question, too, is a difficult one to answer at the present time. Our research people, however, believe that the day is not too distant when homes will be wired for telephones just as they now are for electricity. The subscriber then will simply obtain the various telephone models he wants, much in the same way as he chooses appliances today.

This statement is not as visionary as it might seem. There are few instruments anywhere which can be as truly versatile as the simple home telephone. As one evidence of this, the Westinghouse Electric Corp. recently developed a new device which can do all the chores around the home—and which works over telephone lines and equipment.

Closest Thing to Magic

This system basically consists of a relay box. When the housewife goes out, she turns the equipment to automatic. Then, from any dial telephone in the nation, she can call her home number. Another code number connects her to the specific appliances she wishes to control —whether it be to cook a steak, wash the laundry, defrost the refrigerator or switch off the lights.

Other, somewhat more prosaic, services also can be obtained from the telephone. To see one possibility, look at the changing design of the American home. It is becoming larger than ever, and more spread out. If that trend continues—as seems likely—more and more householders will find themselves installing a home inter-communications system which operates over telephone lines. One such unit recently developed enables a mother to hear her child in another part of the house and to talk to him if necessary. This type of system also can enable a housewife to talk with a stranger before deciding whether it is wise to open the door.

Answering devices of various kinds also are developing sizable new markets for the telephone companies. General's "Electronic Secretary," for one, is finding a ready acceptance among businessmen. This device answers the telephone when its owner is away, says that he is out and then records a message from the caller. Eventually, we believe that a somewhat smaller version of this device will also find a large market in the home.

Nearly as promising are the tiny electronic receiving sets which are just large enough to fit in the coat pocket. When a telephone call comes for the owner of this instrument, the switchboard operator presses a button and "beeps" the little set. The carrier then presses a button and puts a miniature speaker to his ear to learn who is calling him. He then can go to the nearest telephone to take his call. These instruments already are being widely used in hospitals, and also were carried by some political workers at the Republican convention in Chicago this past summer.

Another innovation literally proves that "the sky's the limit" where telephone service is concerned. Two-way, air-to-ground telephone service recently became available on planes flying aviation's "golden triangle" of New York, Washington and Pittsburgh. Already operating in the air corridor between Chicago and Detroit, the new service will enable passengers on planes in those areas to make telephone calls anywhere in the world. While this service does represent a fairly limited market, it does point up the aggressiveness with which the telephone industry is looking for ways to increase its revenues.

The one change in communications which has aroused the most financial interest in recent months, of course, has been the transmission of business data over telephone lines. Certainly, the market for this service should grow into an extremely large one. For business today has literally mountains of data which must be moved from one office to another, and often as swiftly as possible. As noted earlier, moreover, the wide-spread use of telephone lines for this service will enable the industry to make full use of its plant during those six idle hours in every day.

Data Transmission Revenues

How much in added revenues can data transmission mean to the telephone companies? That question cannot be answered until the rates for the service have been fully determined. But one indication can be furnished. At General Telephone, our telephone plant of $2.2 billion compiled revenues of $375 million last year. Yet those revenues were obtained by plant which, in effect, actually was working only 18 hours of the day.

Obviously, much business data will have to move over our lines during the day. Huge volumes of it, however, are of the type which can be sent at any time during the small hours of the morning.

Take, as one example, a chain of supermarkets, whose central headquarters wishes to keep a day-by-day record of the markets' inventories. The store manager can take his inventory when the market closes at 5 p.m. Then, sometime during the night, the complete inventory will be sent in about 15 minutes across telephone lines. By the time the central headquarters opens

the following morning, all the information will have been received from the stores and tabulated.

This type of service, it should be added, is a "natural" for telephone companies to offer. For business data can be transmitted over the same high-speed voice channels that are used for telephone calls. The telephone companies have found, incidentally, that these channels carry messages of far better quality than those sent by cable transmission.

The whole field of data transmission also means the telephone companies are being called on to provide communications for business machines. In other words, to furnish the wires and systems which will enable two computers to "talk" to each other. One system already has been developed which can transmit as many as 50,000 words in 45 seconds. Another can send 2,400 bits of computer data a second over a 200-mile telephone line. At the receiving end of the line, the information is recorded on tape and fed automatically into a computer.

As one part of this service, communications companies also are playing a part in developing a COBOL system (for Common Business Oriented Language) in computer programming. This system will substitute key words in simple English for the present complicated jargon used to "instruct" a computer in its functions and currently understood only by electronic computer specialists. The language already has been drawn up and agreed to by most computer manufacturers, acting at the request of the Department of Defense. Our Sylvania subsidiary expects to have such a system ready for rent or sale sometime after the first of the year.

What about the third phase of communications—its visual, or television, side?

Currently, the average person thinks of visual communications as being restricted to entertainment and the home television set. It is true, of course, that we at General now have a very large stake in commercial television through our Sylvania subsidiary, which is one of the nation's largest maker of television sets and of television tubes.

It should be added that Sylvania has made some extremely promising strides in television. It was, for example, the first company to develop the square tube. It has now crowned that achievement, moreover, by developing the industry's first reflection-free tube. Such a tube enables a television image to appear as clear in broad daylight as in the traditional darkened room.

'Hello. Glad to See You'

But the field of television—and the role of the communications company with a stake in it—is far broader than this. Ultimately, we feel that television may well become an integral part of the telephone itself. It is extremely likely that the telephone user of the future will see, as well as hear, the party on the other end of the line.

In the meantime, however, the telephone and the television set already are moving closer together. The link comes through close-circuit television using telephone transmission lines. Here, too, a new and rapidly growing market is being created for telephone service.

With closed circuit television, as one example, a plant owner needs far fewer watchmen. He can, in fact, employ just one man to monitor a television set which has cameras set up at all a plant's gates. As another example, more and more businessmen are coming to realize the value of closed-circuit business conferences, where executives separated by many thousands of miles can meet face-to-face through the medium of the television camera and the telephone line.

Other possibilities for television are almost as limitless as the opportunities for the telephone itself. The traffic jams of today, for instance, could be easily controlled merely by having a series of camera-equipped stations to monitor the flow of cars in and out of cities. Another use would be in printing. As in the closed-circuit conference, a printer could merely run off a sample of work and show it to a customer many hundreds of miles away.

The rapid strides being taken in the field of Pay-TV bring up still another possibility for communications companies. There are many such systems at present, and some of them appear to be in conflict with each other. But it seems most likely that, whichever system wins out, Pay-TV shows will be transmitted over telephone lines and into the homes of viewers. Certainly, it is the most economical way the transmission could be handled at the present time.

All in all, the possibilities for the telephone, television and data transmission appear so limitless that many telephone research men feel that the home of the future automatically will be equipped with one new outlet. This outlet would serve to bring in television, the telephone and whatever type of computer facility may be used by the future homeowner.

Does data transmission in the average home seem like a futuristic dream? Many research people are sure that it will come. Certainly, it is no more outlandish than would have been the statement a few years ago that a housewife one day could cook dinner by dialing a telephone number.

General Telephone & Electronics also is extremely optimistic about two other fields which we feel are open to a communications company. The first of these is the growing use of the telephone abroad. To take advantage of this rapidly burgeoning market, in fact, we

In the ten years between 1950 and 1959, *defense electronics* increased nearly ten-fold to a total of nearly $5 billion—because of such developments as high-speed, highly reliable communications systems, electronic navigation, electronic countermeasures and counter-countermeasures (which really mean the jamming of radar and the jamming of the *other* fellow's jamming) missile guidance systems, early warning systems, and the many other developments.

have co-ordinated all our foreign manufacturing and sales facilities into one company, General Telephone International.

This company, among other things, will oversee our telephone manufacturing facilities at Antwerp, Holland, and Milan, Italy, as well as our other production facilities in Canada. The foreign market for new telephone equipment, incidentally, is extremely promising not only in the nations of the European Common Market, but in other countries as well. Many of the underdeveloped countries of South America, Africa and the Middle and Far East are moving rapidly into the twentieth century. As they develop, and their standard of living rises, they need increasingly larger amounts of communications equipment.

The Microwave Network

One piece of equipment in the changing world of communications is particularly adaptable to these countries. That is the microwave radio relay tower, which flashes telephone calls by radio along a series of towers. This equipment has been used extensively in the United States by both General Telephone and the Bell System, and Western Union currently is constructing a coast-to-coast microwave network to handle its communications.

The advantages of such equipment in foreign countries are many. For one thing, the towers are less costly to build than land lines and poles, though they furnish telephone calls which are of equally high quality. Secondly, the microwave equipment can be installed in terrain that up to now has been virtually impassable, particularly for installing poles or cables.

The second growth area in which we are moving is lighting. This we consider to embrace more than merely the field of home lighting, though Sylvania ranks with the nation's largest producers of light bulbs and other home lighting. Most promising in the future, we believe, is a new type of illumination called Panelescent lighting. It is best described as a system that converts electricity into light within a phosphor.

At the present time, Panelescent lighting is being used largely for night lights in the home or to light obscure corners. But we believe that it has a large growth potential not only for space lighting, but for instrument panels, electronic display and control systems and for flat wall television sets. Eventually, it could even blossom out as a method of lighting up side walks, or illuminating theatres without interfering with the quality of the picture.

A LOOK INTO THE FUTURE

What do we see in the future for the company with a stake in oral, visual and data communications? As noted earlier, there is a market for at least 10 million additional telephones in the United States. And that figure, of course, does not take into account the extremely effective job the telephone companies are doing in "selling" still more telephones to present customers.

Similarly, anyone studying the future of a communications company must also consider the rapid growth of data transmission, the many new communications devices being developed even now, and the impact on revenues which could result from savings made by the advent of electronics in the telephone industry.

Certainly, population figures alone tend to show that the communications industry has a bright future. By the latest census count, the United States has added another 28 million people over the past 10 years. In the next decade the country probably will add another 30 million. An extremely high percentage of these, of course, will be customers for communications services.

At General Telephone, we have made our own projections as to what we believe we will accomplish over the next 10 years. On the telephone side alone, we feel that the number of instruments on our lines will grow to about 6.5 million, representing a better than 50% increase over our present number.

The growth of General Telephone in electronics should be equally impressive. Currently, the entire industry does a volume of roughly $15.1 billion a year. With the way electronics has been growing, and at the rate new products are being developed, we do not see how its total volume can fail to reach $27.3 billion by 1970.

It would seem impossible, in fact, for the communications industry not to grow at a rapid rate in the future. Today, no single service is so vitally important as that of communications between people, whether in the U.S. alone, or between countries of the world. And with the vast changes coming to the world of communications, it seems certain that its job in the future will be far greatly expanded and it will be performed more efficiently than ever.

Speaking of the "incredible" 1960's, Keith Funston, president of the New York Stock Exchange, predicts that by 1970 the shareholder population will reach 22,000,000. Earlier he estimated the number of shareowners in publicly-held companies at 12,500,000, almost double the number in 1952.

Moreover, Mr. Funston stated that if business in the 1960's proceeds according to present forecasts, the Exchange will list, by 1970, approximately 11,000,000,000 shares, or twice as many as now. Daily volume at the end of the next decade may rise to 6,000,000 shares. This compares with 1,700,000 average shares in post World War II.

* * *

In 1690, men from Massachusetts returned tired and beaten from an unsuccessful siege of Quebec. Booty from the anticipated victory, it was thought, would finance the expedition. Tables were turned, however, and debts for ships, cannons, muskets, powder and shot mounted. Hundreds of hungry soldiers threatened mutiny if not fed and paid. These needs were met with a nearly empty treasury. And out of this dire need, Bills of Credit—in effect mere promissory notes—were issued. This was the first "paper money" in America.

MORE ENERGY... IN MORE FORMS... FOR AMERICA'S GROWING NEED

Keeping the home fires burning is a big part of Texas Eastern's job. And it's getting bigger. As more millions of homes are heated with gas, the importance of Texas Eastern's natural gas pipelines increases.

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TEXAS EASTERN TRANSMISSION CORPORATION

Houston, Texas Shreveport, Louisiana

GULF PRESS CONFERENCE **10**

A service of Gulf Oil Corporation in the cause of creating—through the facts as we see them —a fuller understanding of the oil industry.

Is $1 million a mile a fair price?

That's what you'll be paying, through your government, to build the new interstate highway system by 1976. Some $40 billion for 41,000 miles. It is probably history's greatest public works project. It will benefit the economy and promote national defense. But $40 billion is a lot of money. If the costs are not being fairly shared—and if your dollars' value is not being fully realized—you should know about it.

Q. Wasn't that $40 billion figure somewhat lower at the start?

A. Some $12.4 billion lower. The Federal-Aid Highway Act of 1956 asked $27.6 billion for 40,000 miles. Of this, 90% was to come from a Federal Highway Trust Fund, 10% from the States. But two years later the cost was $40 billion.

Q. That's a mighty big boost. What was the reason for it?

A. In some part, it was the addition of 1,000 miles of roadway. For the *most* part, however, it was the sharply raised cost estimates of the states through which the system passes. The states, you see, pay all costs, then seek a 90% repayment from the Trust Fund.

Q. Where, specifically, are all the dollars coming from?

A. Under the 1956 law, the federal gasoline tax covered 80% of the costs. Other road-user levies would make up the rest. But when Washington raised the gas tax from 3¢ to 4¢ a gallon last October, it *also* raised gasoline's share of the cost to about 85%. This percentage is to hold until the 1¢ boost ends June 30, 1961. Then, other vehicle levies will fill the gap. In short, the road user is footing the whole bill.

Q. Isn't that as it should be?

A. If the new system were meant simply as a motoring convenience, yes. But the highway bill was passed principally for its national defense and overall economic values. It will help the military move men and materials quickly. It will stimulate industrial complexes, lift land values, open up new tax sources. So it would seem defense and general funds should also help finance the highway project.

Q. Will the road-user taxes you mentioned cover the cost?

A. They could—with two big "ifs": first, *if* costs don't rise any more and second, *if* the road-user revenues are earmarked for the program.

Q. Let's look at the first "if." Is another cost rise likely?

A. The facts certainly suggest so. Remember that, only two years after the original estimates were computed, the costs had already risen by 45%.

Q. You suggest, then, that we're not getting good dollar value?

A. Some of us think not. Bureau of Public Roads officials have said that minimum BPR standards were being exceeded and that plush design may be adding to cost. And Virginia's Senator Harry F. Byrd wrote these words to the Secretary of Commerce, "On the basis of the kind of experience we have had with the interstate system to date, it is not difficult for me to foresee costs rising to a point in excess of $50 billion by 1975."

Q. You also suggested that all road-user revenues are not going to the highway fund. Isn't that true?

A. Unfortunately. In 1959, the federal government collected $3.6 billion in road-user taxes—mainly on gasoline. Of this, 39%—$1.4 billion—was turned over to Treasury's general fund. Some states also divert road tax revenues. In 27, constitutions forbid this. But in 1958, $303,326,000 was diverted. That's 6.5% of $4.7 billion taken in.

Q. If the taxpayer pays anyway, what's wrong with present financing?

A. It's unfair two ways. First, the road user—mainly the motorist—is paying for more than the roads. He's footing a huge bill for national defense and economic development which should be paid from other funds. Consider this: at the Defense Department's suggestion, bridges over the system are to be raised from 14 to 16 feet so that missile-carrying trucks can pass. This will add roughly $1 billion to the highway bill—but nothing to motoring convenience.

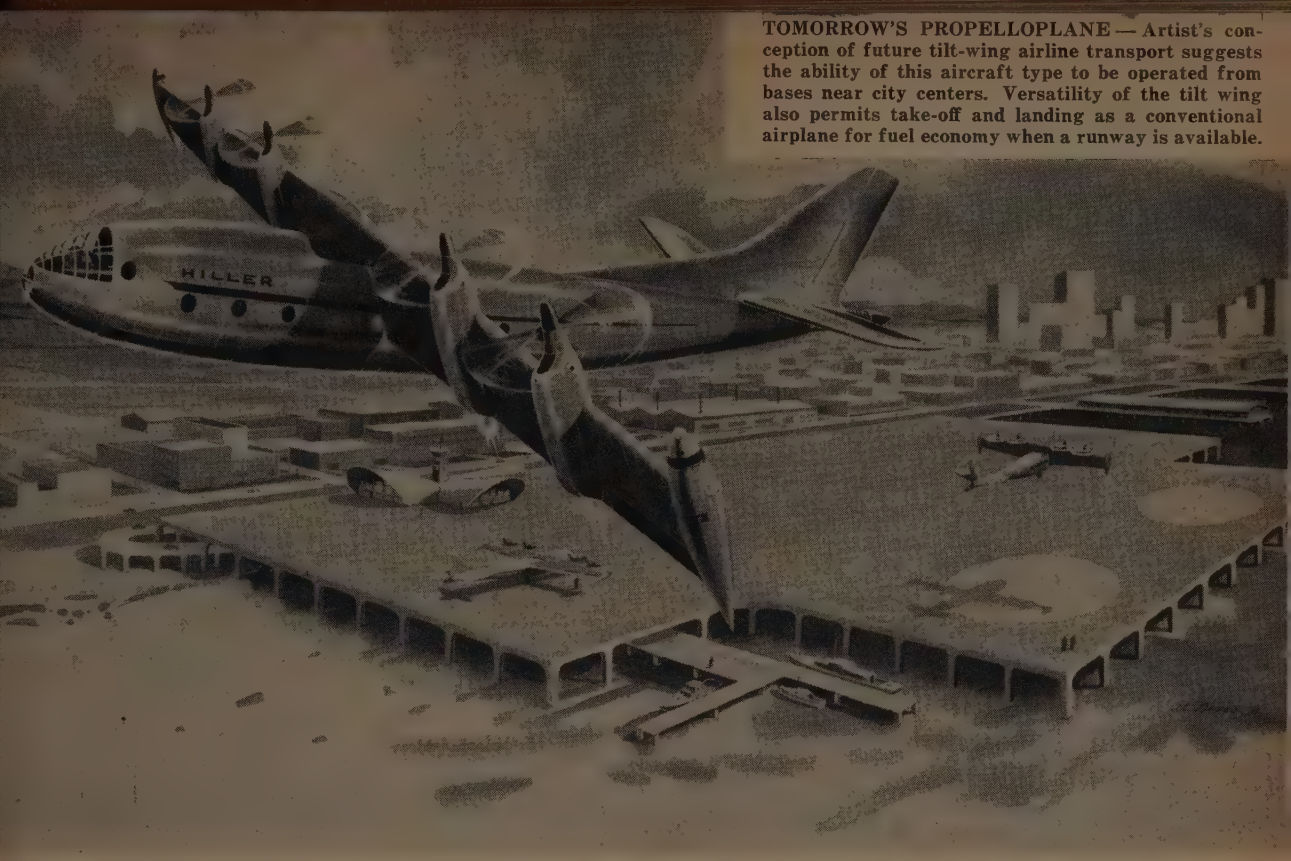
Q. And what do you see as the second wrong we face?

A. Present practices are pushing gasoline taxes—and thus, gas prices—unnecessarily high. They've caused two tax hikes already, 1¢ in 1956 and 1¢ in 1959. (Taxes now take nearly 50% of the pump price.) And Washington is now asking another ½¢. If all the road-user revenues had gone into the highway fund, last year's 1¢ rise in gasoline taxes wouldn't have been necessary.

Q. What do you think we should do to right these wrongs?

A. Simply be consistent. The government shouldn't have it both ways. If it's wrong to divert general funds to highways, it's also wrong to divert highway revenues to the general fund. We should bring defense and general funds into the program and earmark *all* road-user revenues for it. We must naturally see to it that no waste creeps in.

We welcome further questions and comment. Please address them to Gulf Oil Corp., Room 1300, Gulf Bldg., Pittsburgh 30, Pa.



TOMORROW'S PROPELLOPLANE — Artist's conception of future tilt-wing airline transport suggests the ability of this aircraft type to be operated from bases near city centers. Versatility of the tilt wing also permits take-off and landing as a conventional airplane for fuel economy when a runway is available.

The Helicopter Soars Into the Blue

by Stanley Hiller, Jr.

THE HELICOPTER INDUSTRY, which failed to move far off the ground in the past decade, expects to really soar into the blue in the next ten years. Specifically, I predict close to a 10-fold sales growth in that time.

This might sound like a replay of expansive predictions made so generously and often in the past. But the industry *now* is coming of age. Its optimism is based on reality—on a proved product that has achieved a high level of performance and reliability, a product that has reached a stage of design stability which should mean volume output and more profits for the manufacturer and the investor.

What's most important, the industry now is shooting for a market it knows is there for the helicopter: the industrial and commercial field.

The military, which has and still is financing most of the technological development that has pushed the industry so far ahead in the last few years, undoubtedly will continue to be its best customer for years to come.

But no longer do the surviving leaders in the business talk about a helicopter in every garage. No longer are they concentrating their development work trying to produce an aerial flivver of limited capabilities in an effort to keep it simple, inexpensive and within the reach of everyone.

Instead, the industry now realizes price reductions must come through increased volume. This, in turn, is possible only by cutting down on the large number of models and types, and, instead, broaden the abilities of each machine to expand its field of application.

The military already has indicated it will concentrate on fewer types. This should accelerate the production of more highly advanced and versatile helicopters for both military and civilian needs. Thus, the industry has come to realize—after too many years of misdirected energies and frustrated hopes—that a mass market for a vertical flying flivver just isn't there. Not now at least; nor will it be for years—if ever. For one thing, it's doubtful the

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Stanley Hiller, Jr., is president of Hiller Aircraft Corporation, one of the nation's three largest helicopter manufacturers. Mr. Hiller formed Hiller Industries in 1940 *and built gasoline model automobiles and die-casting machines. Within a year, full time was devoted to manufacturing helicopters. America's first Coaxial Aircraft XH-*44 *was flown by Hiller in* 1944.

price of a helicopter can ever be brought down to the level of the ordinary wage earner. And if it ever reaches such a quantity market, the traffic control problems would be staggering.

Industry Faces Education Job

Although the industry has a long way to go in pulling down costs, many firms with unusual problems already are discovering the economics of the 'copter make a lot of sense.

Utilities, petroleum firms, construction companies are among those which have found the helicopter does tasks impossible any other way. Agriculture, forestry, law enforcement—and business executives with special flying needs—also are learning the virtues of this versatile machine.

In planning an all-out sales seige on the commercial and industrial market, the helicopter industry is well aware it faces a giant education job. It's not unusual for one company in an industry to use helicopters, or to charter them extensively, with decisive economic advantage. Others in the same industry, with the same or similar problems, have yet to make the move. Surprisingly, some industries in foreign countries are making greater use of helicopters than similar firms are in the U. S. Agricultural spraying, for instance, is one example.

Why are some companies slow in accepting helicopters? They sometimes are scared by the $50 to $100 an hour cost which they compare with a $4 an hour ground vehicle. They forget it's the total cost of doing a specific job that counts—not the per hour cost of one part of it. The dilemma might be compared with the over-all benefits of an expensive and complex electronic computer that replaces a number of employees for a given function.

There's abundant evidence the industrial and commercial helicopter markets are rich ones—but they are tough and slow to tap. And, since the helicopter industry itself is barely out of its infancy, it's still in a struggling period when almost every potential customer must be individually convinced of the economic benefits of a vehicle that costs many times that of conventional equipment now used to accomplish a given mission.

In addition, the long-term economic gains from using helicopters often require replacing existing tools. This may demand comprehensive management planning—similar to deciding on an expensive piece of machinery or any other major capital expenditure. On top of all this, the helicopter industry itself is in the process of building up experience and collecting knowledge of the prowess of its own product, and of the many new applications and refinements that are revealed with each new user. Until a few years ago, performance was not always good enough to capture some of the industrial potential. But this is constantly being improved to meet the requirements of more and more potential users — thus expanding this market. For example, in the light helicopter field, maximum hovering ceiling for a small ship three years ago was about 3,000 ft. It's now 17,000 ft. By next year, we expect it will be 25,000 ft.

What's more, our Hiller 12E helicopter will carry nearly 70% more payload than the same size model did in 1957.

When we start using new light turbine engines, we plan to make them adaptable to our present 12E machine so customers can up-date their equipment to take advantage of the latest performance gains. Building improvements on a basic airframe design, incidentally, is a long range Hiller program that will make it possible for customers to keep up with latest improvements. The cost problem would become increasingly critical if an entirely new helicopter had to be developed each time a new power plant or better component were to become available.

Thus, conservative design factors have been developed for high life components to provide for growth into a family of helicopters with constantly greater performance and versatility. While we cannot talk of cutting prices as fast as we'd like, at least we can boast about the way the industry has been able to increase the work load of a given machine — which is giving the customer more for his money. For it's a basic fact of helicopter life that the number of jobs a helicopter can do jumps 10-fold when the performance of a given model is only doubled.

Right now, the latest light helicopter can lift at least a half ton. The largest ones can hoist up to 2½ tons of payload—depending on the fuel loads and equipment required for the assigned task. These performance maximums, incidentally, should be boosted steadily as fuels and power plants are improved and additional technological innovations are introduced.

Maintenance costs, another sales barrier in the past, are going down as performance goes up. The Hiller model developed with U. S. Army contributing sponsorship requires less than half the maintenance of the military average. Major overhauls on some models, once necessary at 600 flight hours, now are on a 1,000-hour schedule. One other barrier that has slowed the growth somewhat of the helicopter industry is gradually being overcome. It's government restrictions which force helicopters to live with the same rules as fixed wing aircraft.

Proof Is 'In The Pudding'

The sales trend for the industry proves the vast commercial and industrial markets are the bright hopes for the future. They not only offer a new lucrative sales potential, but also a means of lessening the industry's dependence on the military.

In the six years since 1954, our company's sales have grown from $6 million annually to more than $16 million. At the same time, military volume declined from a peak of 88.5% of sales in 1955 to 74.5% forecast in 1960. We see no reason why we can't hit a goal of 50% in non-military business in the years ahead. The light helicopter industry has shown a continuously increasing dollar sales volume among commercial customers with unit volume moving upward, too.

Does the public like helicopters?

The flourishing gains made by the scheduled helicop-

ter airlines proves they do. Services in Chicago, Los Angeles and New York carried 366,000 passengers last year—a 60% gain over 1958. The passenger load factor, which indicates the number of saleable seats actually occupied, increased 8.7% in 1959. The total traffic of these services increased 44% for a total of 855,000 revenue ton miles. Revenues from scheduled helicopter service operations climbed from $798,000 in 1950 to $7.7 million in 1959. The cost of sales went from $732,000 in 1950 to $7.1 million last year. Return on investment in 1959: 10.6%.

At mid-year, there were 173 commercial operators in the U. S., or 10.9% more than in 1959. There were 693 helicopters in use by operators and by companies as executive aircraft, or 13.2% more than the year before. Both the number of operators and the number of helicopters in use have increased in 1960 at a rate faster than that of 1959 over 1958. In Canada, the breakdown is 201 commercial charter machines, 13 corporate or executive 'copters, and 57 operated by government agencies, exclusive of military.

In addition, a report issued in September 1960, by Aerospace Industries Association, shows 1,369 helicopters in operation outside the U. S. and Canada—80% of which were manufactured in the U. S. The report covers 240 operators in 62 foreign countries.

The helicopter continues to make a name for itself in ways that can't be measured in dollars or by any gauge of economics—saving human lives in times of disaster. News accounts dramatically emphasize how flood victims are snatched off roof tops, from haystacks or out of trees. Fishing pilots out of icy oceans, or rescuing mountain climbers caught on challenging heights, have been accepted as part of the helicopter routine.

Thus, if the helicopter industry had no other justification for the huge expenditures involved in advancing and perfecting its product, these life-saving feats alone would be enough.

The helicopter is a unique air vehicle with incredible flight characteristics. Slowly, industry is learning such a flying machine can do a lot for it. The industrial operator is discovering that even with a helicopter costin $30,000 to $50,000, he can compete successfully with conventional ways of tackling a job. By using a helicopter, he is finding he can outbid a competitor who depends on ordinary equipment in a situation ideally adaptable for the helicopter.

A job over rough terrain is one example. Several months ago, Southern California Edison officials bought a Hiller helicopter. They are, in their own words, just scratching the surface of helicopter application for their industry. We are bound to learn invaluable lessons as this firm experiments and finds new uses for the helicopter. In the same industry, some time ago, a construction company used one of our new ships to erect power lines. The poles were moved and placed, and the lines strung, all by helicopter—something never done before by a light ship.

Still another utility, building high tension power lines in the Rockies, is finding the $6,000 a month it is spending for a helicopter and a pilot, less than it would cost to bulldoze miles of roads over the rugged terrain and haul crews and materials over these roads. The helicopter, of course, is a big labor and time saver on such jobs. Using it, the entire construction project takes on a completely different approach.

'Build as the Birds Fly'

The route over mountainous areas can be more direct since roads are unnecessary. The choice of tower positions is not limited to locations accessible to ground crews since an entire power pole, or parts of prefabricated towers, can be carted through the air. One light 'copter, with the use of a quick-release cargo hook, can make as many as 24 round trips between a staging area and the job site carrying an estimated 12 tons of payload in about a six hour work day. The helicopter's rapid movement between two points more than offsets the lighter payload hauled on each trip compared with a land vehicle. Not only does the helicopter do the job faster in most instances, but it also eliminates the need for other massive and expensive equipment.

In stringing electric lines, the 'copter picks up the heavy spools of cable, unwinds the wire from tower to tower—slowly, carefully, backing up or hovering as necessary. It holds the heavy, cumbersome drum at just the right height, easing it back and forth as the work requires. But utilities have need for more than just the brute strength of a helicopter; they are invaluable for transmission line patrol.

Inspections in the Sky

In what other way could trouble spots on high lines be inspected at eye level? With the helicopter, a repairman can hover for close examination of frayed wires, defective insulation, rust spots and other trouble sources invisible from the ground. In aerial survey work, the helicopter has no peer. The 'copter operates effectively at high altitudes hauling surveyors and equipment. The result: more square miles surveyed per hour or day. In recent snow pack surveys in California's Sierra Nevada, at altitudes ranging well above 10,000 feet, surveys that formerly took a four-man team two weeks were done in two days by two men in a helicopter.

The petroleum industry also is finding the helicopter an efficient workhorse. It has proved invaluable for preliminary surveys to determine best routes for future roads or pipelines. It's used to establish and supply isolated work parties, acting as a flying pick-up truck in pipeline construction through swamps, jungle and other difficult terrain. And once the pipeline is completed, the helicopter is an ideal emergency repair vehicle, flying men and complete portable welding equipment to a breakage point.

Some other uses: herding cattle and rounding up strays; servicing off-coast oil rigs; scientific research; fighting forest fires, blowing rain off fruit; spraying, dusting and fogging crops; servicing forest ranger stations; spotting whales, sharks, and other fish; police

traffic control; photographic missions; and air search work.

VTOL—BIG HOPE OF THE INDUSTRY

Any discussion of helicopters would be incomplete without commenting on the outlook for "Vertical Take-off and Landing" aircraft (VTOL) since helicopters are part of the VTOL group.

In fact, Hiller received the industry's first military contract to study the tilt-wing concept for VTOL flight six years ago. At that time this seemed to be the optimum solution in the search for effective and economical VTOL aircraft. Now, having completed the majority of military funded programs in this field, Hiller engineers, and a growing number of other VTOL experts, are convinced that tilt-wing aircraft have the best chance to become the first operational high speed VTOL's.

The Hiller X-18, designed, built, and now in test for the U. S. Air Force, is destined to provide a comprehensive volume of valuable flight data. This 16½-ton giant began an exhaustive flight test program in mid-1959 at Edwards Air Force Base, California. Tests are continuing with the sole objective of obtaining flight information for the detailed design of advanced tilt-wing prototypes.

What does all this mean to helicopter manufacturers and other aircraft firms eager to get in on the ground floor of the VTOL field? They should share in a revolution that will affect the nation's entire air transportation system.

Change Must Come

I have not found anyone in my segment of the aircraft industry who disagrees that our entire air transport system will become obsolete in gradual stages with the advent of vertical take-off and landing aircraft. We, in the helicopter industry, have studied and tested VTOL for several years because it was a natural by-product of our research and development. But why should our entire air transportation system face eventual total conversion to VTOL?

First, traffic at air terminals is a serious problem now, both on the ground and in the air. Airport modernization and expansion programs already are hard pressed to keep pace with the current growth of air travel. A Federal Aviation Agency survey of 3,000 airports pointed to the need of $1 billion for improvements from fiscal 1959 through fiscal 1962. Meanwhile, airline growth continues to aggravate the problem as the number of arrivals and departures increases 15% annually. But frantic "adding-on-to" and modernization will serve only today—*not* tomorrow.

Why? Because the whole system is tied to one huge piece of real estate—the airport. In addition, the larger these pieces of real estate become, the farther away from population centers they become. This compounds the surface transportation problem between airport and city center. The solution? Vertical take-off and landing aircraft, of course.

The first economically feasible VTOL's will be turboprop ships developed from experimental projects like our X-18. These are essentially medium range aircraft. Gradually, "vertiports" will be established near cities. They will drain off the excess medium and short range airlines from the giant international air terminals. This will be possible because vertiports will require only enough real estate to take off and land planes vertically; no runways.

As the number of vertiports grow, the progressively long range jet ports will be relieved of the medium and short range traffic burden. Best of all, the number of vertiports can be increased as traffic demands since these airports won't require the immense land spread and expense of conventional airports with long runways.

Ultimately—probably several decades from now—the long range supersonic jets will be built with VTOL capability. Then the runway type airport will be used only for freight planes.

Extensive Development Needed

The effects of a VTOL revolution are obvious. It could be the tail that wags the dog for some of us helicopter manufacturers eagerly watching developments in this field.

But work on VTOL aircraft is not the only diversification in the helicopter industry. Our studies embrace all types of rotary wing aircraft, jet engines, combustion research, ducted propeller experiments such as the flying platform, ground effect machines (GEM), etc.

Not only does this work comprise a sizeable portion of the annual sales for many helicopter companies, but it also enables them to retain a fairly large and competent staff of engineers even when the work load falls off after the design on a production model is completed. But, since the helicopter industry is relatively young, extensive records on sales and profits on an industry-wide basis are not available. Comparisons are further complicated by accounting practices that vary among companies.

In some instances, where a firm manufactures other products and other aircraft in addition to helicopters, sales and profits are not always broken down on a product-by-product basis. But according to the best approximate figures available, in the light helicopter field, the following comparison indicates the general growth trend:

Sales of Light Helicopters
(Approximate)
Gross weight: 2300 to 2800 lbs.

	1957	1958	1959	1960 (est.)
Military	$ 9,129,608 (192 units)	$14,058,168 (255 units)	$13,311,948 (268 units)	$ 8,500,000 (180 units)
Commercial	$ 8,044,550 (152 units)	$ 5,879,215 (110 units)	$ 7,360,149 (136 units)	$ 9,073,000 (175 units)
Totals	$17,174,158 (344 units)	$19,937,383 (365 units)	$20,672,097 (404 units)	$17,573,000 (355 units)

Dollar volume of helicopter charter and contract revenue by private operators in the U. S. is not available. The growing volume of passenger traffic on scheduled helicopter airlines was discussed.

The upswing in government purchases is shown in the following figures compiled by Aerospace Industries Association:

Defense Dept.	7 accepted, 1941	689 accepted, 1957
Air Force	7 accepted, 1941	172 accepted, 1954
Navy	3 accepted, 1943	193 accepted, 1957
Army	6 accepted, 1949	450 accepted, 1957

In 1955, the Armed Forces had an inventory of 2,268 helicopters. By 1959, the total had grown to 3,657. This included ships in flying condition or in need of minor repairs.

Responding to the increased popularity of helicopters and the recent swift growth of this industry, the Federal Aviation Agency last year published a *Heliport Design Guide*. It offers advice on planning, and building heliports and helistops for private operators, city and county governments. The guide also makes recommendations on helicopter usage that take greater advantage of the unique flying abilities of this aircraft—abilities that have been only partially exploited because of limitations imposed by rules guiding fixed wing aircraft.

SUMMARY

We have told Hiller stockholders, in the company's last annual report, that 1960 will be an important year in the development of their firm. And I can't help but extend these feelings to the *entire industry* for the *entire decade*. I also told Hiller stockholders we planned to introduce new helicopters this year which we think will have a profound effect on our company. Other firms in the industry are also making major contributions.

While military procurement cycles have historically produced sharp peaks and valleys in the aircraft industry, and such a dip can be anticipated for 1961, the growing commercial market can, to a greater and greater extent, counteract these fluctuations. There is every indication that utilization of vertical take-off and landing aircraft, both for the military and commercial, will expand rapidly during the 1960's.

For the investor who wants to stake his confidence in this young and growing business, there is ample evidence to predict that as the decade proceeds, the helicopter business dollar volume will climb at a rate well exceeding the growth of business airplanes in the comparable period of their development.

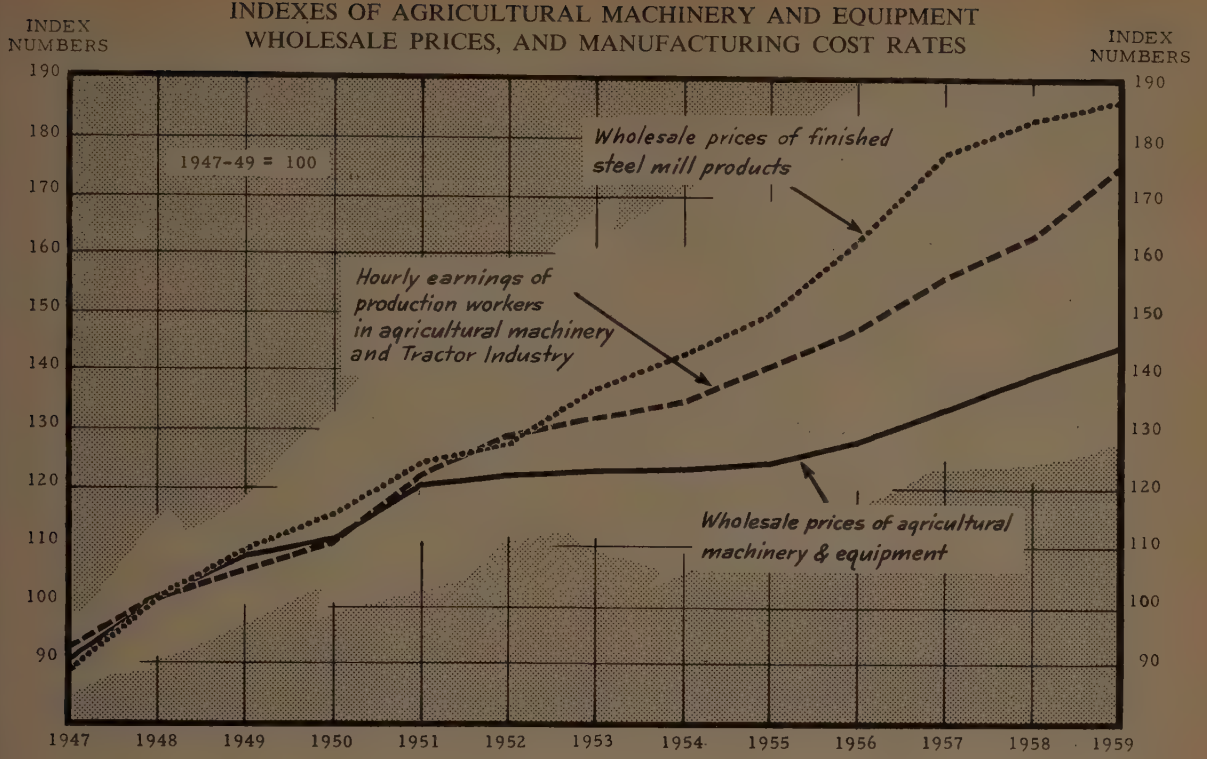
A few weeks ago Armco Drainage & Metal Products, Inc. introduced a new kind of steel building. It has *all* the structural advantages of steel in a modern, architectural style that's beautifully at home—anywhere. New "low silhouette" roofs and sculptured wall panels give these buildings a costly, customized look. Yet, they carry a price tag that warms the hearts of businessmen who want to beat the high cost of construction.

Over the years the kind of research and development that went into this Armco subsidiary's "new idea in building" has been an important ingredient in Armco's steady growth. Armco Steel Corporation, General Offices, Middletown, Ohio.

ARMCO

ARMCO STEEL

Armco Division • Sheffield Division • The National Supply Company • Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Union Wire Rope Corporation



The Changing Farm Scene and The Agricultural Equipment Market

by Wm. J. Grede

LATEST CENSUS FIGURES detailing the continuing decline in the number of persons living on farms have raised questions about the future of agriculture and allied industries in this country.

Not unexpected in this election year has been the great concern expressed by representatives of both major political parties, most of whom appear to view the reduction in farm population as a development of recent years which can be attributed to the misguided policies of the opposite party. Campaign oratory, particularly in big cities, has been replete with nostalgic reference to the passing of the "old red barn" type of small family farm.

Wm. J. Grede, president of J. I. Case Company, has had a long and distinguished career in the fields of industry, finance, public administration and the academic world. He joined Case in 1953 as a director, and was elected president in February of this year. In 1960 he was named chairman of Grede Foundries, Inc.

The small family farm is indeed passing from the American scene, but this development is part of an irresistible evolution in agriculture that has been going on for 100 years. Traditional and homely as the small farm has been, it is simply not an efficient economic unit for the mechanized industry agriculture has become.

As late as 1936, one in every four persons in the United States was counted as a farm dweller; the latest census figures list fewer than one in ten. However, we must take into consideration that the Census Bureau definition of "farm dweller" was changed before the last census, a change which recognized the evolving nature of agriculture as an industry.

The old definition of "farm dweller" included all people who lived on farms and encompassed those who did not sell farm produce commercially. The new definition limits "farm dwellers" to those who not only live on farms, but sell at least $50 worth of crops or live-

stock annually. Under the new definition, 4,076,000 farm dwellers were listed in the March census. Had the old definition still been used, the count of farm households would have totaled 5,158,000.

With the average farm household estimated at 3.91 persons, the census count gives us a farm population of about 18 million individuals, less than 9% of the total population. Yet, this small percentage is not only providing agricultural commodities for the rest of the nation, it is piling up surpluses at a record rate.

If we take a closer look at this farm population, we'll find that most of it raises farm products for its own consumption and sells little commercially. Approximately 16½% of this country's farms produce 60% of the farm products sold.

The 'Magic' of Modern Farming

Based on this, it has been predicted that all farm goods for the expanding overall population of this country, plus a margin for export and reserve, can be supplied by 5% of the people farming in the modern manner.

And, by farming in the modern manner is meant farming by machines, which do a more efficient job than the many laborers they are releasing for more productive work in industry.

It was not always so. A hundred years ago, farming was a family affair with the size of a farm restricted by the number of individuals available to perform the manual labor by which all farm operations were conducted. Machines, as we know them, were non-existent for farm operations. All work was done by hand with simple tools.

More than 80% of the population of the United States was classified as rural, and a large portion of this was made up of farmers. Most of the nation's farms were located in the eastern half of the United States and were small enough in size to be operated by the male members of a family with perhaps a hired hand or two to help. The average farm was about 160 acres, although some farms were as large as 2,000 acres.

In the first half of the nineteenth century, a westward movement began which introduced a new concept in farming as the Plains States became settled. With seemingly unlimited fertile acres available for the claiming, farms changed their size and character. The older, Eastern farms produced products for the farm family's own needs, with perhaps a bit left over to be sold or traded in the nearest community. The new Western farms—with wide acres suited to growing grains on a large scale— became vast food factories producing on a commercial scale products designed for sale to the rest of the country.

This revolution in farming was made possible by the devolpment of machines which enabled farmers to cultivate and harvest crops much larger than could have been handled efficiently by manual labor.

One of the first major developments in machines for farming was McCormick's reaper, introduced about midway in the last century. It enabled the farmer to cut and gather ripened grain over vast acreage during the critical few days between the time grain ripened, then broke and began to rot. This critical time was too short for a farmer to harvest more than a few acres of grain with the traditional manual methods. The reaper opened the way for farmers to plant great fields of grain and profitably harvest them for market.

In the same period in which McCormick brought out his reaper, others applied machines to the problems of threshing and separating wheat and other grains. In 1848, Jerome I. Case, founder of the farm equipment company that today bears his name, opened shop in Racine, Wis., offering a combination thresher-separator to farmers. In other parts of the country, the Pitt brothers, John and Hiram, brought out their own thresher and separator, as did Jacob Wemple, who went into partnership with George Westinghouse to market their own thresher-separator.

Crimean War Spured Production

In 1854, the Crimean War provided a stimulus to wheat farmers that resulted in an unprecedented demand for farm machinery. Wheat prices in the Chicago market jumped from $0.72 a bushel to $1.43 and inspired farmers to increase wheat acreage to double or triple that they had cultivated by the old hand methods. To harvest the doubled and tripled crops, farmers invested heavily in the new reapers and threshers. The new horse-drawn seeders also were sought by farmers eager to expand operations to take advantage of the market.

Wheat exported from Chicago rose from 1¼ million bushels to 10 million bushels. Merchants gave credit

Employment, Hours & Earnings in the Farm Equipment Industry

Production and related workers

Year	Number	Average weekly earnings	Average weekly hours	Average hourly earnings*
1947	140,300	$ 55.76	40.7	$1.37
1948	153,200	60.59	40.5	1.50
1949	146,200	61.11	39.3	1.56
1950	139,500	64.60	40.1	1.61
1951	153,600	73.26	40.7	1.80
1952	137,000	75.41	39.9	1.89
1953	126,200	77.21	39.8	1.94
1954	104,800	78.21	39.5	1.98
1955	114,400	83.84	40.5	2.07
1956	108,400	86.80	40.0	2.17
1957	105,700	91.31	39.7	2.30
1958	94,700	95.59	39.5	2.42
1959	112,800	101.35	39.9	2.54

*Average hourly earnings are on a "gross" basis, i.e., they reflect not only changes in basic hourly and incentive wage rates, but also such variable factors as premium pay for overtime and late-shift work, and changes in output of workers paid on an incentive basis. Non-wage fringe benefits, however, are not included.

Source: The Farm Equipment Institute.

freely to newly wealthy farmers, and manufacturers expanded to meet the sudden prosperity.

The bottom dropped out of the market three years later, but by that time the agricultural eqiupment industry was firmly established. Although many firms collapsed with the economy, others managed to survive the resulting recession. Wheat rallied, following a drought in England; farmers increased their acreage; and, with the mobilization at the beginning of the Civil War, farm labor grew scarce. All this contributed to a renewed demand for machines to replace men on the farm.

The War Between the States added a second major boost to the farm machinery industry. Until this conflict, the United States had not recruited armies and conducted a war without allowing soldiers to leave the army at harvest time. When Lincoln called for every third, able-bodied adult man to serve the nation, the men were able to leave the farms and know that the harvest would be completed without them. Because of machines, the Northern armies were fed. Unfortunately for the South, the greatest wheat-growing lands and the most machines were in northern territory.

After the Civil War, westward expansion continued and the flatlands west of the Mississippi filled with farmers from every state, and from almost every country in Europe, attracted by the Homestead Act and the colonization work of the railroads. Large-scale growing of wheat was an established part of the economy, and farmers called for more and more machinery with greater and greater capacity.

Railroad Boosts Wheat Yields

Although the use of portable steam engines to replace horsepower in operating farm equipment dates back to the immediate post-Civil War years, a boom in farm steam engines did not get underway until 1885. But when it came, it continued until the gas engine began to supplant steam in 1912. At first, the steam engines provided only power for fram equipment and had to be hauled about by horses. But the self-propelled steam engine soon made its appearance in answer to demands by farmers, who were enjoying the wildest period of wheat farming in history.

This was the so-called Bonanza Era in the Dakota Territory, which began in the early 1870's. Inspired by the panic of 1873, which brought the failure of America's biggest banker, Jay Cooke, the Bonanza Era began as a measure to save the Northern Pacific Railroad. Officers of the railroad, as a result of the Panic, found themselves struck with large amounts of securities which had become worth approximately ten cents on the dollar. They exchanged their bonds for large tracts of railroad lands lying mostly in the Red River Valley in the Dakota Territory.

J. B. Powers, land commissioner for the railroad, convinced the officials that the way to get their money back was to undertake wheat farming on a gigantic scale on their newly acquired lands. A test farm was set up and wheat yields were so fabulous—when farming was conducted on a large scale—that farmers were soon pouring into the territory to try this king-size type of wheat farming.

The first experimental farm covered 75,000 acres and employed thousands of men and hundreds of machines to operate. Other farms which were started in the territory were more modest in size, although several notable ones were larger than 30,000 acres. The average "bonanza" farm was small in comparision to these giants, but it was generally understood that the term could not properly apply to any farm with less than 1,000 acres.

This was the age of huge harvesting crews of hundreds of men and machines that traveled from farm to farm gathering in the ripened grain. The itinerant farm worker in mass made his appearance on the American scene.

The introduction of steam power and the "bonanza" farm system stimulated the rapidly expanding farm machinery industry, and inevitably a rash of quick-money promoters appeared to cash in on the demand. They did great harm to honest manufacturers, but their mortality was also great. Records of the '70's and '80's indicate that nearly 100 of them disappeared after one season of high-pressure selling and failure of their machines.

By this time, the steam tractor had made its appearance and other types of farm machinery had been redesigned for use with this "universal" farm engine.

Gasoline Tractor Enters Scene

By the turn of the century, "bonanza" farming had lost some of the wild excitement of its beginnings, but the pattern of the changing farm scene had been set. The small family farm was being displaced by large, commercial agriculture operations run like any other big industries and employing machines to replace costly and inefficient manual labor.

The successful farmer was losing his bucolic character and becoming a business manager as familiar with machine operation and schedules as he was with chemi-

MACHINERY PLOUGHS A MYTH

Commenting on "The Myth of the Family Farm," Stanley Walker, in the New York Herald-Tribune, points out that mechanization has replaced that dim American dream:

". . . Granny working on her quilt, Aunt Mary churning, Ned, the hired man, coming in with eggs, Mama baking some pies, Uncle Charlie (not too bright) hacking at the weeds in the yard, Papa out plowing with the horses named Tom and Jerry, the kids (all rosy-cheeked) doing little chores and reading Herodotus in between, the beehives humming with promise of a sweet harvest—all this seems to have vanished. They don't even sprawl out before the fireplace to read, as Abe Lincoln did. They don't read; they watch television. And come to think of it, Lincoln didn't stay long on the 'family farm'."

DOMESTIC SHIPMENTS OF FARM MACHINES & EQUIPMENT

Year	Domestic Shipments (in current dollars) Total	Tractors only (2)	Domestic Shipments (1) (in 1947-49 dollars) Total	1947-49 = 100	Tractors only (2)	1947-49 = 100
	$1,000	$1,000	$1,000		$1,000	
1947	1,132,686	435,503	1,254,400	90.0	476,000	85.9
1948	1,513,613	598,044	1,492,700	107.2	589,000	106.5
1949	1,550,934	638,092	1,432,100	102.8	595,800	107.6
1950	1,562,175	638,959	1,411,200	101.3	588,900	106.3
1951	1,917,415	793,497	1,596,500	114.6	687,600	124.1
1952	1,681,181	674,339	1,382,600	99.2	572,900	103.4
1953	1,553,931	645,226	1,270,600	91.2	545,000	98.4
1954	1,276,288	529,040	1,044,400	75.0	452,600	81.7
1955	1,421,320 (3)	576,950 (3)	1,153,700	82.8	496,500	89.6
1956	1,243,466 (3)	465,495 (3)	974,500	70.0	386,000	69.7
1957	1,343,582	515,469	1,005,675	72.3	403,900	72.9
1958	1,607,758	591,062	1,156,660	83.0	444,000	80.2

(1) Computation based on farm equipment wholesale price index.
(2) Includes garden tractors.
(3) Does not include the value of attachments and parts for tracklaying tractors.

Source: Data on manufacturers' domestic shipments for 1947-1954 are taken from "Agricultural Statistics, 1956" (USDA); for 1955 and 1956—U. S. Department of Commerce.

cal fertilizer and other newly developed aids to attaining better crops.

The gasoline tractor, which appeared commercially after World War I, added perhaps the greatest single impetus to the evolution of farming from a small, horse and hand labor operation into mechanized, commercial-type business. Such manufacturers as J. I. Case, Allis-Chalmers, International Harvester and John Deere developed compact tractors within the price range of most farmers, so there was no need for the average farm to do without this versatile machine and its many pieces of companion equipment.

The results of this increased trend towards mechanized operation have been that fewer and fewer workers are necessary to produce bigger and better crops. A hundred years ago, it took 80% of the population to feed the remaining 20%. Today, we are approaching the time when 5% of the population can not only feed the rest of the people, but pile up surpluses for export or reserve.

Accompanying the development of farm machinery has been the growth of chemical products for farming. New fertilizers, insecticides and other chemical compounds have enabled a farmer to double, triple, or quadruple the yield of his acreage. But, without the development of farm machinery to apply chemical products, efficient use of these discoveries would be impossible.

The development of liquid chemical fertilizers indisputably has played a major role in the multiplying farm production. But, if farmers had to apply these liquids by hand, carrying tanks on their backs while they walked between furrows spraying the chemicals, our present production levels would still be beyond the horizon. With proper farm equipment, applying wonder chemicals to soil or crops, on a large scale, is done quickly and easily.

Machinery Benefits Livestock

The livestock farm also has come to depend heavily on farm equipment for efficient operation, particularly in the area of materials handling. The large quantities of feed needed for today's big herds require machines to load, transport and distribute on a scale impossible with a manual operation. The handling of manure, which is an important part of a livestock operation, can be done most efficiently by machines. Barn-cleaning and other livestock chores have become increasingly mechanized.

Dairy farming is perhaps the most dramatic example of the way in which machines have taken over jobs formerly handled manually. Herds of dairy cows are moved daily into position in sanitary barns where they feed contentedly from machine-fed troughs while being milked by automatic equipment that does the job better and faster than a platoon of manual milkers. The milk is further processed on the farm by equipment which prepares it for market automatically.

Like all evolutions, the evolution in agriculture is an accelerating process that picks up speed as it goes along. Beginning slowly in the last half of the nineteenth century, the changing farm scene speeded up until, in the first half of this century alone, food production methods underwent greater changes than they had in the previous 5,000 years. *We at Case believe this acceleration process still has a long way to go before a leveling-off point is reached and that the farm equipment industry will go right along with it.*

Perhaps the most important impact of farm machinery on agriculture is its impact on worker output. As more and more farm workers have deserted agriculture to take jobs in non-farm industry, improved farm equipment has not only allowed farm laborers to maintain the level of output, but has actually enabled them to outdo the output of non-farm industries.

Taking as a base the year 1947, when output was most nearly equal, a comparison of the index of real output for farm and non-farm workers in the past 50 years illustrates the effectiveness of farm machinery in offsetting a diminishing supply of labor.

Index of real output per worker (farm)

1909	58.2	
1947	100	
1948	107.1	
1958	188.6	
1959	192	(est.)

Index of real output per worker (non-farm)

1909	51.6	
1947	99.4	
1958	126.3	
1959	126.3	(est.)

Output of farm workers increased about 3.5 times while output of non-farm workers increased 2.6 times in the same period. As the number of farm workers continues to decrease, the trend will be for corresponding increase in the productivity of farm workers as the farm machinery industry continues to develop equipment which will increase the productivity of the dwindling farm labor force to keep up with the demands for farm products by a growing population.

If the present techniques and equipment now used on 25% of the nation's farms were extended to 40% of the farms, a reduction of 30 to 40% in the number of farm workers would be made possible. And, as farm labor continues to migrate to non-farm jobs, the extension of technique and equipment becomes more urgent.

Today, farm wages are 5 times what they were in 1940, while farm machinery prices are only 2.5 times the 1940 prices. The farm equipment industry has managed to hold its wholesale prices at 2.5 times what they were 20 years ago in spite of the fact that farm equipment industry salaries are now 3 times what they were in 1940, and the price of components is 2.8 times what they were then.

At the present time, the average farm industry investment, per worker, is approximately $20,600. For farms with gross incomes of $10,000 or more annually, the estimated investment per worker is approximately $50,000. This $50,000 average investment is made by the one sixth of all farms which produce more than 60% of all farm products sold.

At the top of the investment-per-worker scale are the farms with gross incomes of $25,000 or more. These have investments of more than $75,000 per worker.

From this can be seen one reason for the decline of the small farm. The high cost of labor requires heavy investments in farm machinery which, in turn, require substantial returns. The small farm simply does not return enough for the investment required.

This does not mean that the family farm will disappear from the American scene to be replaced by huge agricultural corporations. It does mean that the nature of the successful family farm has changed from the days when a farmer and his sons worked their few acres by hand. The modern family farmer is a businessman with a substantial investment in farm equipment that enables him to operate on a scale providing a sufficient return on his investment. Faced with a declining labor supply, he has turned to machines to increase his productivity.

To the farm equipment industry, this indicates a need for larger and more complicated machines to take over more and more of the work on farms. The era of

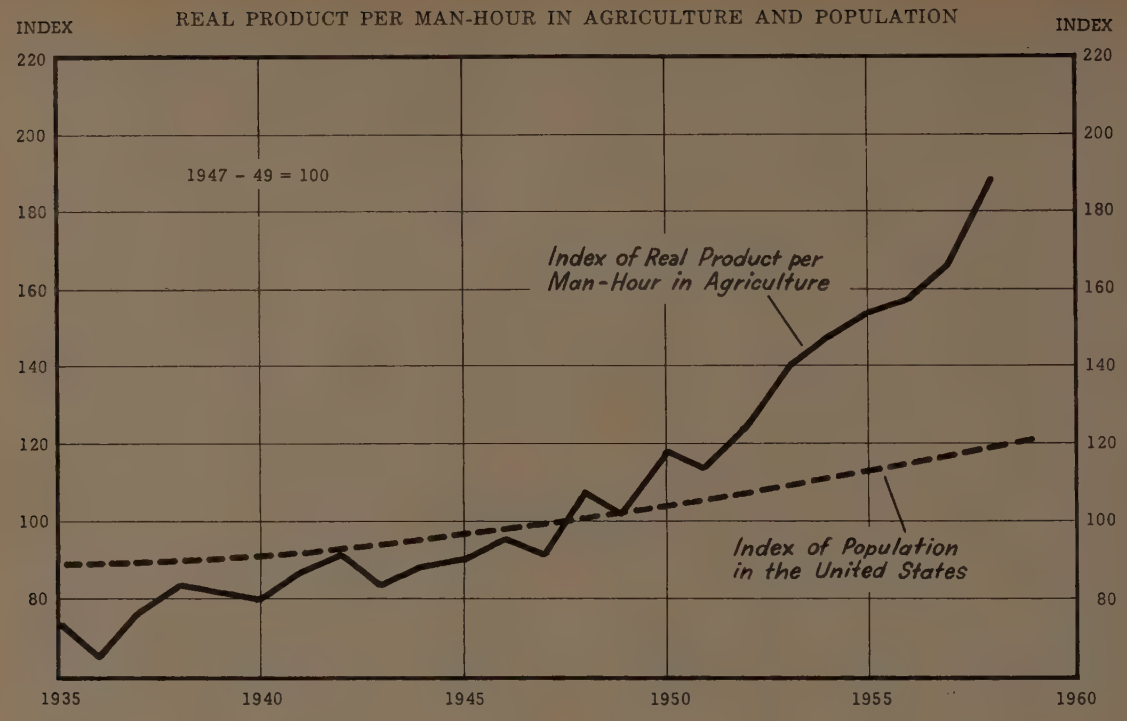
INDEXES OF AGRICULTURAL MACHINERY & EQUIPMENT
WHOLESALE PRICES, & MANUFACTURING COST RATES

1947-49 = 100

	Wholesale Prices			Prices of Components of Farm Machines & Equipment					
				Materials				Hourly Earnings (1)	
Year	Agricultural machinery & equipment	Farm & garden tractors	Agricultural machinery exc. tractors	Iron & steel	Finished steel mill products	Tires & tubes	Metals & metal products	Agricultural machinery & tractors	Tractors
1947	90.3	91.5	88.8	89.7	89.1	99.4	91.3	93.0	93.8
1948	101.4	101.4	101.6	104.3	101.3	101.8	103.9	101.5	101.6
1949	108.3	107.1	109.6	106.0	109.7	98.8	104.8	105.5	104.6
1950	110.7	108.5	112.4	113.1	115.2	113.6	110.3	109.3	108.8
1951	120.1	115.4	122.9	123.2	124.5	133.9	122.8	122.1	122.7
1952	121.6	117.7	124.1	124.7	127.2	129.8	123.0	128.2	128.6
1953	122.3	118.4	124.8	131.3	136.9	127.2	126.9	131.6	132.6
1954	122.2	116.9	125.5	132.9	142.8	130.6	128.0	134.4	135.9
1955	123.2	116.2	127.9	140.6	149.5	144.9	136.6	140.5	141.9
1956	127.6	120.6	132.4	154.7	162.1	152.2	148.4	147.2	148.5
1957	133.5	127.5	138.2	166.2	177.5	150.9	151.2	156.0	156.5
1958	139.0	133.1	144.2	168.8	183.7	152.4	150.4	163.2	166.2
1959	143.4*	138.4*	149.4*	171.9*	186.7*	134.3*	152.8*	172.8*	174.2*

(1) Based on gross average hourly earnings of production workers or nonsupervisory employees. "Fringe benefits" not included.
*August 1959.

Source: U. S. Department of Labor.



"push button" farming is not as far in the future as some imagine. Economic and sociological forces are accelerating the approach of the day when farms, if they are to exist, must be fully automated.

Indications are that farmers realize this, too. Expenditures for farm machinery have risen steadily since 1930, even though the number of dwellers has decreased. Here is how farm machinery expenditures have risen:

1930	$ 524,000,000
1940	625,000,000
1950	2,344,000,000
1955	2,591,000,000
1958	2,965,000,000

Expenditures for farm machinery hit an all-time high of $3,140,000,000 in 1952, but this was an extraordinary condition brought about by the stimulation of the Korean War with its accompanying high food prices.

Eliminating this unusual combination of circumstances, we can see the upward surge of farm machinery expenditures following a steady pattern that is far from reaching a plateau. In fact, with the continuing rise in this country's standard of living, the upward rise of farm equipment purchases will become even more marked.

It is axiomatic that living standards of countries vary in direct proportion to the use of equipment on the farm. Asiatic countries, such as India, which have little farm equipment, have some of the lowest living standards in the world. While the United States, which leads in the use of machine methods of farming, has the highest living standard. Communist countries, which are straining every effort to produce more and more tractors, threshers, and other farm equipment, know exactly what they are doing in their attempts to match and outstrip this country's progress.

For the immediate future, we at Case anticipate a moderate increase in farm equipment sales generally. The uneven nature of the economy this year, following last year's drop in farm income, has affected most companies in the industry, but a slight improvement may be anticipated at this time. During this year, farm income has climbed back from its 1959 lows to almost the level of 1958, despite previous predictions of a drop this year of 8% below 1959 following on the 1959 drop of 16½% below the previous year.

The problem of imports and their effect on America's farm equipment industry is still something of a question mark. Labor costs form a high percentage of total equipment costs and, of course, foreign labor gives importers a price advantage to offset the cost of shipping equipment here.

To meet this competition, U. S. industry must make advances in manufacturing techniques and automation to negate the effect of our high labor costs. And, we must beat European technology in order to do this. Right now, European manufacturing techniques are about on a level with ours in this area.

Foreign Imports a Factor

Some U. S. firms are importing foreign equipment in an effort to meet this kind of competition. Favorable tariffs enable this to be accomplished successfully in

many instances where firms have foreign subsidiaries. There are indications that a trend is building up for an increase in foreign subsidiaries for sales abroad and for imports for sale here.

But, comparing the two methods of meeting foreign competition, we at Case feel that improvement of our own efficiency and automation offers the most solid method for the long run. Imports will continue to have a place in farm equipment sales, but we have not yet reached the point where American industrial ingenuity will give up in the face of competition.

Key to meeting competition at this time lies in the costs of labor. If unions continue to demand higher and higher wages—regardless of the industry situation —the farm equipment industry must develop a crash program to displace workers with machines. If labor costs can be kept at a reasonable level, the progress towards inevitable automation can proceed in an orderly manner without the displacements and upsets an emergency program might engender.

The immediate future of the farm equipment industry will be hinged to the general economic situation. But the long-range future can be read in the declining numbers of our farm population. We're not only going to need more machines, we're going to need bigger and better farm machines to increase productivity so that our declining number of farmers can continue to meet and exceed the farm products requirements of our expanding population.

Finally, what will be the effect of this increased productivity on farmers and on consumers? We believe that it will be beneficial both for the farmer who produces the food and the housewife who buys it.

Increased productivity will mean an inevitable reduction in the unit price of farm products; but since this will be accompanied by a decline in the number of food producers, the total amount spent for food will be divided among fewer producers. Meanwhile, increased production will be reflected in lower unit cost for consumers.

And, they can both thank the farm equipment industry for this happy consequence.

New York Society to Europe For Another Visit

The New York Society of Security Analysts is scheduled to make its second financial fact-finding tour of Europe's industrial centers in the spring of 1961. The dates, March 31 to April 23.

In making this announcement Edward S. Wilson, president of the New York Society (and manager of the research department of W. E. Burnet & Co.) said that the itinerary would include London as the first stop. Then the Analysts will be divided into two groups. One group will visit Copenhagen, Stockholm, Dusseldorf and Brussels. The second group will visit Amsterdam, Munich, Vienna and Zurich. Both groups will then meet in Paris before returning to New York.

The plane is being chartered by The National Federation of Financial Analysts Societies so that member Societies, in addition to The New York Society, will be eligible. Cost of trip is $875, which includes the plane fare.

The New York Society's initial European trip, in 1959, included visits to 30 foreign companies, and in some cases plant sites were inspected. In addition, four of Europe's leading stock exchanges were visited: London, Paris, Amsterdam and Frankfurt.

European Societies of Financial Analysts have been formed in London and Frankfurt, and plans are well underway for similar societies in Paris and Amsterdam.

Trip co-chairmen are Alan Cornell Poole, Hemphill, Noyes & Co., and Monte J. Gordon, Bache & Co. Assisting the New York Analysts in Europe will be J. Graham Blease and Stanley R. Brimblecombe, both of the London Society of Investment Analysts. Messrs. Blease and Brimblecombe attended the 1960 annual convention in New York of The National Federation of Financial Analysts Societies. Also assisting in the London arrangements will be Tim Mosely of Model, Roland & Stone.

Frances Haidt, Herzig, Farber & McKenna, will serve in a general advisory capacity, and Doris Maydin, General American Investors Co., is to assist in trip organization. John Hinkle, Chemical Corn Exchange Bank, is in charge of allotment of places, trips, visits and meetings. Edward R. Holt, Newburger, Loeb & Co., is publicity chairman.

Helen Slade Sanders Scholarship Winner Now a Financial Writer

Sylvia Auerbach, the first Helen Slade Sanders scholarship winner, is now employed by the New York Journal-American in the financial department. Mrs. Auerbach attended Columbia University's Graduate School of Journalism last year, and following that went on an extensive European trip. This scholarship was established in 1959 by The National Federation of Financial Analysts Societies. The second scholarship winner, Ivan Sinclair, is currently attending Columbia.

Columbia University, on Oct. 13, passed the following resolution: "Resolved that the Dean be requested to express the warm thanks of the Graduate School of Journalism and its Faculty to the National Federation of Financial Analysts Societies for providing the Helen Slade Sanders Memorial Scholarship and thereby aiding a deserving young journalist each year and strengthening the School."

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Are Two Million Investors Wrong?

An Appraisal of American Telephone

by Charles Tatham

AT THE END OF 1959, American Telephone reported that it had 1,736,681 share owners, which made its common stock by far the most widely held equity investment in the country.

This represents a more than doubling (an increase of 110%) in the number of its stockholders during the past ten years. Actually, the present number of investors who own A.T.&T. stock would be greater than the above figure, probably close to two million, since a substantial number of shares are held by nominees and in "street" names. Two questions would seem to call for a careful answer:

(1) How rewarding has an investment in Telephone stock really been; and (2) how rewarding is it apt to be in the future?

The last issue of *The Financial Analysts Journal* contained an article (American Telephone — A Growth Stock? by Norvin R. Greene) which presented a rather negative view of A.T.&T., both from the standpoint of its record and of its prospects. Is this view a correct one—on either score? Has the wide popularity of Telephone as an investment been in fact undeserved? Are Telephone's two million stockholders now wrong in their appraisal of the Company's future? We think the answer to both questions is no.

The article's opening sentence read, "American Telephone & Telegraph Company stockholders have not been protected against the ravages of inflation over the past 37 years." A subsequent sentence stated, "From 1922 to 1959, a period of 37 years, Telephone paid the same $9 dividend, neither more nor less in any year." And a little later, "Sale of stockholder rights from time to time would have added something to the A.T.&T. owner's dividend income. However, it would have made up very little of the added cost" of goods whose price has greatly increased as a result of the inflation in our economy.

It seems probable that this view is widely held in the financial community and it had led us to make a rather careful study of the record to see to what extent it is justified. Actually, if an investor had bought Telephone stock in 1922, he would have paid, at its average price for that year, $40.46 per share, adjusted for last year's 3 for 1 split. The annual dividend subsequently paid, until the 10% increase in June, 1959, was $3 per share, similarly adjusted, thus providing an annual income return on cost of 7.41%. However, this does not tell the whole story. Telephone issued to its stockholders valuable rights in 16 of the 37 years under review. If these rights had been sold at their average market value and the proceeds "considered" as income, the average annual return to the investor through 1959 would have been 9.15% on cost. Over the 37-year period, 1922 to 1959, inflation, as measured by the Consumer Price Index, has averaged about 1.5% per year. If the investor's total return is adjusted for this factor, his average "real" annual return would have been 8.36%. If, instead of buying Telephone stock, the investor had kept his capital in a cross-section of utility bonds (Moody's 40 Utility Bond Average), his average annual return would have been 4.10% before, and 3.89% after adjusting for inflation.

What would have been the investor's experience if he had bought A.T.&T. at subsequent dates during the past 37 years?. *Table I* gives some interesting food for thought.

Column 1 shows the average market price, adjusted for the 1959 split, for the year 1922 and as averaged for each subsequent 5 year period. Column 2 shows the subsequent average annual return on this average price, assumed to be the investor's cost, through 1959. This return includes both the dividend and rights at their average market price. Column 3 shows the average annual return on cost adjusted by using the Consumer Price Index to show "real" return. Columns 4 and 5 present comparable data for Moody's 40 Utility Bond Average.

As compared with a *bond* investment, with income adjusted to a purchasing power basis, it is apparent that the A.T.&T. stockholder has fared rather well. What has been his

Table I

	-1- Average Market Price (Cost)	-2- Subsequent Average Annual Return on Cost	-3- Adjusted Average Annual Return on Cost	-4- Average Utility Bond Yield Period to Date	-5- Adjusted Average Bond Yield
1922	$40.46	9.15%	8.36%	4.10%	3.89%
1922-26	43.76	8.42	7.92	3.95	3.89
1927-31	65.91	5.41	4.85	3.81	3.59
1932-36	41.78	8.05	5.50	3.39	2.47
1937-41	50.40	6.81	4.49	3.27	2.17
1942-46	51.93	6.81	4.95	3.29	2.38
1947-51	51.36	7.15	6.45	3.49	3.11
1952-56	55.74	6.78	6.57	3.82	3.66

Charles Tatham, manager, Public Utilities Department of Bache & Co., is a former vice president of Institutional Utility Service, Inc., and an ex-president of The New York Society of Security Analysts. He has collaborated with Benjamin Graham and David L. Dodd in the third edition of Security Analysis.

experience as compared with that of an investor in electric utility common stocks over this period? For the purpose of developing evidence on this point, purchases were assumed to have been made in 1922, 1930 and 1946 and the subsequent increases in per share earnings, dividends and market price were computed through 1959. *Table II* shows the results for Telephone, a group of seven electric utility companies, (namely Baltimore Gas & Electric, Boston Edison, Commonwealth Edison, Consolidated Edison New York, Detroit Edison, Pacific Gas & Electric, Southern California Edison) and Moody's 24 Electric Utility Average. The seven electric utilities represent the only large operating companies whose common stocks were actively traded in over the entire period. The figures for A.T.&T. are all adjusted for the effects of rights offerings.

Here again, it is evident that the holder of Telephone stock has not done too badly. It is only in respect to the effective rate of increase in dividend in the most recent period that the comparison is significantly unfavorable.

It is obvious that Telephone has not been a "growth" stock in the popular Wall Street meaning of the term. But growth is only one attribute that contributes to investment quality. Stability and regularity of return are two others that, historically, have been even more important factors in determining investment value. A.T.&T. has certainly had an enviable record in this regard and, in addition, has in fact had a measure of "growth" that compares not unfavorably with what in earlier years were considered prime electric utility common stocks. We see little sense in comparing A.T.&T. with such industrial equities as duPont, IBM, General Electric and others. As media for the investment of funds, stocks of industrial companies of this character have their own place in a portfolio and provide compensation to the investor that must be considered in conjunction with their own risks. However, it seems clear that, in respect to the past, the investor in Telephone has not done as badly as some people may think.

Table II

Percent Increase in Per Share Earnings, Dividends and Market Price

	Period 1922-59	1930-59	1946-59
Per Share Earnings			
American Tel. & Tel.	81%	81%	78%
7 Electric Utilities	4	14	69
Moody's Utility Average	N.A.	(17)	74
Dividends			
American Tel. & Tel.	71	41	28
7 Electric Utilities	31	0.6	55
Moody's Utility Average	N.A.	(27)	83
Market Price			
American Tel. & Tel.	250	60	70
7 Electric Utilities	115	(10)	77
Moody's Utility Average	N.A.	(38)	95

N.A. Not available.
( ) Decrease.

Table III

	1949	1959	% Average Annual Increase
	(thousands of dollars)		
Total Operating Revenues	$2,893,273	$7,392,997	9.9%
Operating Profit (a)	740,290	3,208,048	
% of Revenues	25.6%	43.4%	
Total Income	$ 352,799	$1,370,410	
% of Revenues	12.2%	18.5%	
% Return on Total Investment (b)	4.9%	7.5%	
Earnings for Common	$ 232,855	$1,113,152	16.3%
% of Revenues	8.0%	15.1%	
Earned Per Share (c)	$ 3.23	$ 5.22	4.5%
Common Dividends	$ 216,127	$ 688,327	
% of Earnings	92.9%	61.5%	
Earned Surplus (d)	$ 340,088	$2,338,261	
Earned Surplus × Common Divs.	1.57	3.39	
Capitalization			
% Funded Debt	50.4%	34.2%	
% Minority Interest	1.7	2.0	
% Common Stock Equity	47.9	63.8	
	100.0	100.0	

(a) Net operating income before provision for depreciation and Federal Income Taxes; (b) Average capitalization and surplus; (c) Based on average shares adjusted for 3-for-1 split; (d) Excludes surplus reserved for possible refunds.

What of the future?

Any appraisal of the outlook must take into consideration the Company's greatly strengthened financial position and the impressive improvement it has shown in virtually all financial and operating ratios in recent years. Certain key figures are shown in *Table III* which demonstrate this very clearly.

Over this ten year period, operating revenues have increased at an annual rate of about 10%, the variation in yearly gain being from 7.2% in 1958, a year of recession, to 13% in 1950. In 1959 the rev-

enue gain over 1958 was 9.2%. Operating profit, the ratio of net operating income (before provision for depreciation and Federal income taxes) to revenues, had shown a striking improvement, rising from 25.6% for 1949 to 43.4% in 1959. This is a key ratio in the financial analysis of a utility company, reflecting the basic profitableness of operations, since the provision for depreciation is a non-cash charge providing for the recovery of capital while Federal income taxes are a distribution of profits to the Federal government. In considerable measure, of course, the improvement in operating profit has been a reflection of rate increases obtained as necessary to develop earnings sufficient to provide a reasonable return on capital.

The improvement in earnings is further shown by the increase in total income from 12.2% of revenues in 1949 to 18.5% last year and by the fact that Telephone's return on capital investment has risen from 4.9% ten years ago to 7.5% in 1959. At the present time, and for the first time in a good many years, the System is largely free of the need for actively seeking rate increases to cover rising costs. Earnings improvement is also clearly revealed by the increase in carry-through to common of from 8% of revenues in 1949 to 15.1% in 1959.

Further evidence of financial strengthening is shown by the reduction in System debt from 50.4% of total capital at the end of 1949 to 34.2% at last year-end and, most importantly, by the increase in earned surplus from 1.57 times common dividends at the end of 1949 to 3.39 times the dividend at the end of 1959. This restored surplus to a level in relation to dividends not achieved since 1931, and was a major reason, we think, for the dividend increase.

The increase in per share earnings, of course, has been at a substantially lesser rate than the increase in total earnings for common, due to the need for selling large amounts of additional stock and convertible debentures, to finance expansion. Due to the greater amount of cash that will be generated from operations, as well as the much improved common equity ratio, future dilution in per share earnings should be less severe than in the past. We would not expect a continued growth trend in the earnings for common at the rate shown over the past ten years, since in large measure this past growth rate reflects the underlying improvements mentioned above. However, we believe that an earnings growth rate in the area of 7% to 8% is reasonable under conditions of general economic prosperity. Whether or not this means that A.T.&T. should now be considered a "growth" stock is, perhaps, a matter of opinion. Our own view is that "growth" of this order should not be undervalued.

Last year Telephone reported earnings of $5.22 per share and for 1960 we presently estimate that about $5.50 per share should be achieved. The present $3.30 dividend rate represents a payout of only 63% of last year's earnings and 60% of expected 1960 results. Since the war the payout ratio has averaged about 78%, and over the past ten years 71%. During this period the company was faced by the necessity of building up surplus to an appropriate level in relation to dividend requirements. In our opinion, this has now been substantially accomplished and we think that the present low payout ratio can be significantly increased. Thus, we believe that there are sound grounds for expecting further increases in the dividend rate. While we believe that the management will follow a policy of reasonable conservatism in this regard and that every effort will be made to preserve the fundamental investment character of the stock, nevertheless a rising trend of dividend payments in line with business growth is, we think, a desirable attribute of an equity investment, which, at a minimum, should provide an income return paralleling increases in the cost of living.

Indications of a change in emphasis in management thinking are revealed in the Company's 1959 annual report where stress is placed on pricing new services at profitable as well as competitive levels. The Company is making every effort "to gain wider public understanding that good profits are as necessary to good performance in our business as they are in any other." The management believes that "telephone earnings broadly comparable with the earnings of progressive, well-managed companies in non-regulated industry will generate maximum telephone progress." It has been studying intensively the subject of profit, performance and progress and reports that "the evidence is overwhelming that companies with excellent profit records do the best job for their customers and employees as well as their shareowners. We are trying in every way we know to demonstrate to the public and the regulatory commissions that this is just as true in our business as in any other."

In our opinion, Telephone's management has demonstrated ability of the highest order. To an increasing extent the Company has been developing new and optional services, which have important potentials for improving earnings and this has been accompanied by intensive selling efforts that have been very effective. Looking ahead, we believe that Telephone stockholders will benefit in full measure from the System's expected continued growth and at its current price (90) we think the stock has merit for virtually every type of investment account.

(Note: The opinions expressed herein are those of the author only and do not necessarily represent the opinions of Bache & Co.)

Changes in Margin Requirements and Stock Market Prices

by Stephen Spiegelglas

(Editor's note: The Federal Reserve Board's July 27, 1960 change to a 70% margin occurred subsequent to the writing of this article. The change, however, does not alter the import of the author's observations).

TEN TIMES IN THE POSTWAR PERIOD the Federal Reserve Board has found it necessary to change the stock market margin requirements, as set in Regulation T, which applies to all loans made by brokers and dealers in securities to their customers.

The dates on which the changes occurred and the new margin rate prescribed are shown below:

Effective Date	Margin Rate %
January 21, 1946	100
February 1, 1947	75
March 30, 1949	50
January 17, 1951	75
February 20, 1953	50
January 4, 1955	60
April 23, 1955	70
January 16, 1958	50
August 6, 1958	70
October 16, 1958	90

Inasmuch as stabilization of economic activity in our country is one of the main functions of the Board, it must be taken for granted that the changes in margin requirements were not haphazard, but rather that both the magnitudes of the changes and their timing were determined on the basis of important considerations—among which the economic conditions in the country and the sentiments and activity on the stock exchanges played a predominant role. In other words, the changes in the margin rates must be viewed not in the narrow sense, namely, as an attack by the Fed on the credit conditions in one limited sector of the economy (the stock market), but in a broader perspective as part of an across-the-board policy carried through by means of this and other measures, and having the stabilization of the economic life of our country as its main goal.[1]

Therefore, whatever the purpose and intent, *stated or unstated,* of the Fed's action,[2] we should anticipate that the changes in margin requirements will not leave unaffected the level of activity on the exchanges, and in consequence the level of stock prices[3] and indirectly the economic climate of the country.[4]

1. Footnotes at end of article.

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In fact, this is what the public actually believes to be the case. The statements of leading Financial Analysts and the comments by brokers and others who supposedly are "in the investment business" convey that impression. Thus, people are prepared to anticipate at least some effects, especially since they expect these measures to be accompanied or followed by other measures designed to have a similar, and therefore a joint, impact on the movement of stock prices.

It is the purpose of this paper to establish the pattern of the movement of the level of stock prices, as measured by the Dow-Jones Industrials, following the changes in margin requirements in the postwar period.

Let us first determine what was the level of stock prices one month, three months, and six months from the date on which the margin rate became effective. We should expect, on a priori grounds, the closing index of the Dow-Jones Industrials to be higher some time after the margin rates were lowered, and a lower index of stock prices after the raising of these requirements. With respect to the 10 changes in the postwar period this can be presented schematically as follows:

Expected movement of stock prices up (+); down (−)	Action taken: Lowering of rate	Increasing of rate
+	4	0
−	0	6
	4	6

Actually, as the evidence presented below shows, stock prices normally tended to move in the opposite direction[5] than the one we have postulated.

Actual level of stock prices one month later	Lowering of rate	Increasing of rate
+	1	4
−	3	2
	4	6

Actual level of stock prices three months later	Lowering of rate	Increasing of rate
+	0	6
−	4	0
	4	6

Actual level of stock prices six months later	Lowering of rate	Increasing of rate
+	3	6
−	1	0
	4	6

The evidence is, in fact, so surprising[6] that we can probably draw the inference that it was the psychological impact of the action taken which was of crucial importance, and that what actually happened was that the public decided to second-guess the Board. Thus, the lowering of the margin requirements was, it now appears, generally interpreted as a sign of weakness in the economy, while the raising of the margin requirements was almost always taken as an indication of a smooth sailing—at least in the short run.[7]

Of course, it must be admitted that it is definitely too presumptuous to expect the Fed to have the power to reverse the direction of the movement of stock prices on the exchanges, inasmuch as the total amount transacted involving margins is only a relatively small proportion of the total of all transactions.[8] All that the Fed can ever be expected to control, via changing of the margin requirements, is an overflow of credit rather than the regular flow of it. The historical records as to what happened at selected points of time after the margin rates were changed is nonetheless interesting and perhaps instructive.

Let us now change the criterion and argue that had the Fed not acted, stock prices would have either risen or declined more sharply, and that, therefore, the effect of the Fed's action actually was the slowing down of the rate of climb or of decline.

The answer will be sought by investigating the movements of the monthly averages of the Dow-Jones Industrials as shown on the accompanying chart. A glance at the chart reveals that the changes involving the lowering of the margin requirements in 1949, 1953, and early in 1958 could have had the postulated effect, while little can be said about the 1947 measure from the chart.[9] It must remain open to conjecture whether it should be considered a misfired attempt or whether it indeed provided credit support for the expansion of equity financing and thereby for the then existing level of stock prices.

As far as the raising of the margin requirements is concerned, one could probably interpret the chart to suggest that the Fed's action was effective in 1946, 1951, and again in April of 1955, in that it has slowed down, via reduction of the amount of credit available,[10] the general rise of stock prices. The same conclusion cannot be drawn from the record in the other three instances. The Fed's attempts to curb the rise of credit and the speculative rise of stock prices in 1958 appear to have been particularly disappointing, while the January 1955 raising of the rates (from 50% to 60%) was definitely insufficient to have any effect, except perhaps on the volume of transactions,[11] requiring an almost immediate boost to 70% in April of that year.

What can be concluded from this evidence? We may conclude that the Fed's action appears to have been effective in the majority of instances, and particularly in those cases involving the loosening of credit. Apparently—as suggested previously—the expectations generated in the minds of the public, due to second-guessing and other independent causes, had a greater impact on the level of stock prices than the tightening of credit by the Federal Reserve Board.

It should be stressed, in closing, that the findings of this exploratory investigation in no way reflect unfavorably on the usefulness of the changes in margin requirements as countercyclical measures. Also, it must be kept in mind that these changes "are not and cannot be cure-alls for stock market excesses and abuses,"[12] and that they have only a minor role assigned to them in the broad action taken by the Fed. They cannot be adjudged harmful, despite the second-guessing to which they may and probably do give rise. To what extent the latter is definitely the case cannot be determined, since the effect of the changes in margin requirements

on stock prices cannot be completely isolated and shown separately. No technique has been yet devised to do that. On the other hand, the historical record of the postwar period seems to suggest that the timing of these changes is important and that it should be given increased attention by the Federal Reserve Board.

Footnotes

1. This is frankly admitted by the Federal Reserve Board. Thus, we read in the Forty-fifth Annual Report, covering operations for the year 1958, that "margin requirements serve as a special-purpose supplement to the general instruments of the Federal Reserve action" (p. 10).

2. The "stated" purpose was expressed in an article by Chairman William McC. Martin as follows: "The margin requirement provision of the Act was not designed to deny the use of credit to the stock market; its explicit objective was to prevent the excessive use of credit" (Federal Reserve Bulletin, March 1955, p. 256).

3. That the Fed is not unaware that changes in the margin rates will affect stock prices can be deduced from this direct passage: "Increasing the margin requirements in February 1945 from 40% to 50% had little observable effect, either on the growth in stock market credit or on the course of stock prices" (Thirty-second Annual Report, covering operations for the year 1945, p. 25). It is only fair to mention that in his March 1955 statement, Chairman Martin was very explicit in pointing out that "this responsibility of the Board of Governors relates to stock market credit and not to the price of stocks" (Federal Reserve Bulletin, March 1955, p. 256).

4. Inasmuch as the stock market generates expectations in the minds of the public, the impact on both the consumer spending and businessmen's decisions, particularly with respect to their inventory policy, becomes unavoidable. In due course, the entire economy is affected. This is not to deny, of course, that inflationary or deflationary pressures which develop within the economy are in turn reflected in stock market activity and prices.

5. If the postulated relationship between the action of the Federal Reserve Board and the movement of stock prices implies a perfect positive correlation (tetrachoric coefficient of correlation = + 1), then all the results obtained for the time periods one month, three months, and six months after the action was taken, yield negative coefficients of correlation. They are: −0.41; −1.00; and −0.41, respectively.

6. It may be added also that the changes in margin requirements did not have the expected effect on customers' net debit balances and that this holds true particularly in those cases involving the raising of these requirements. Examples are shown below:

Tightening of credit date (t)	Customers' net debit balances (in mill. of $) at time t	t+1	t+3	t+6
January 1955	2,558	2,653	2,752	2,779
April 1955	2,752	2,731	2,779	2,789
August 1958	3,153	3,231	3,369	3,410
October 1958	3,311	3,369	3,452	3,567

7. The series of monthly stock transactions may be cited in partial support of this conclusion. However, many irregular movements in this particular series do not allow a more careful analysis and interpretation.

8. The reason is obvious. The proportion had to be small, for postwar period margin requirements ranged between 50 and 100%.

9. The great variation in monthly stock transactions throughout 1947 may be a good indication of uncertainty and unsettled conditions in that year.

10. A good example of that happening is provided by the action raising margin requirements in April of 1955. Note the changes in customers' net debit balances prior and after the action was taken.

Sharp rise in balances prior to action		Minor rise in balances after the action	
	(in millions of dollars)		
Oct. 1954	2,131	(April 1955)	2,752
Nov. 1954	2,242	May 1955	2,731
Dec. 1954	2,443	June 1955	2,757
Jan. 1955	2,558	July 1955	2,779
Feb. 1955	2,653	Aug. 1955	2,753
March 1955	2,701	Sept. 1955	2,848
(April 1955)	2,752	Oct. 1955	2,789

11. While approximately 76.5 million shares were transacted in December of 1954, the number of shares traded in April of 1955 amounted to only about 54 millions.

12. Chairman W. McC. Martin, loc. cit., p. 259.

Swift Confirmation of Hotel Space Anywhere in World Now Available

A new free service providing immediate confirmation of hotel reservations at more than 500 hotels around the world, and confirmations at other hotels within 24 hours, has recently been established in New York City. Known as the Hotel Reservation Control Center, Inc., the operation is now giving daily service to more than 300 major corporations and 25 airlines. Hotels and their associations are also using HRCC for their own patrons and traveling personnel.

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3. Eliminates more than one call to a specific city if no reservations are available at the first hotel.
4. Saves the cost of telegrams outbound.
5. Saves the cost of replies to telegrams as confirmations of reservations invariably arrive collect.
6. Saves time in transmitting, receiving and record keeping.

Summarizing, the client company added, "This service offers better facilities with less expense, less effort and less delay."

Hotel Reservation Control Center also provides Enterprise telephone service in 79 cities across the country. All services are available to individuals as well as companies by calling YUkon 6-2373 in New York City and asking for Miss Clark. Mail address is 342 Madison Avenue, New York 17, N. Y.

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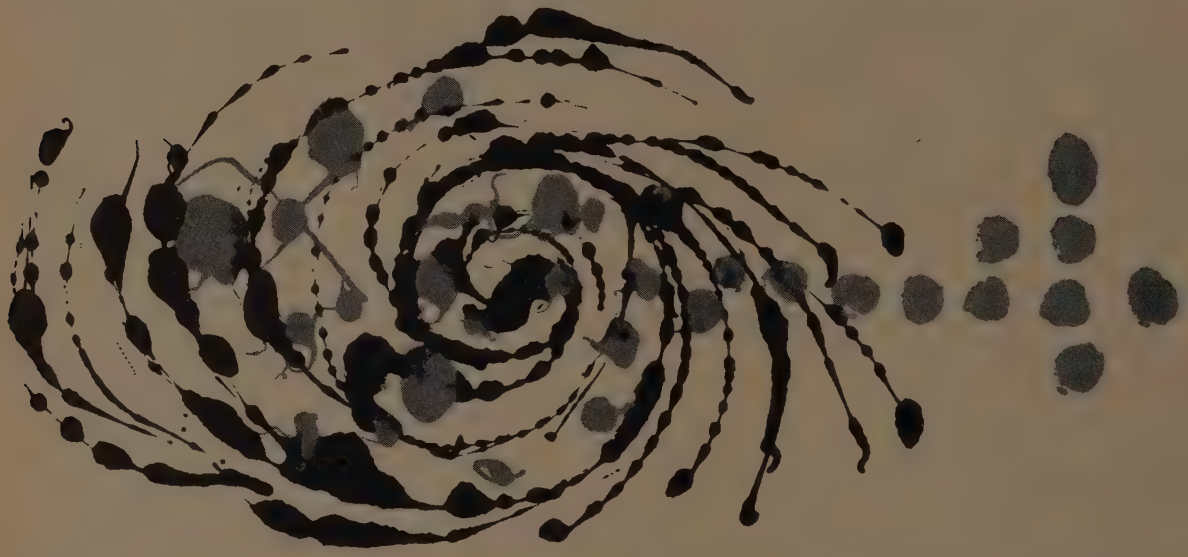

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Modern Answer to a Modern Need

TRANSPORT DIVERSIFICATION

by Daniel P. Loomis

WOULD IT MAKE GOOD SENSE to hire a man to do a job and then deny him the use of tools of his trade in getting the job done? The answer, of course, is obvious.

Yet in the field of domestic transportation, government regulations are doing exactly that. Shippers and travelers employ railroads to do a transportation job, but antiquated regulations usually restrict the use that railroads may make of trucks and buses, boats and barges, and airplanes—all "tools" of the transportation trade—in getting the job done.

'Petty Restrictions'

Even where railroads have been permitted to operate another form of transportation, the Interstate Commerce Commission has usually surrounded the certificate of operating authority with what former ICC Commissioner Mahaffie once termed "petty restrictions, which make [the operations] somewhat more expensive to the carriers and somewhat less convenient to the public."

How these "petty restrictions" are applied and work to the disadvantage of shippers and carriers alike has been vividly described by Wayne A. Johnston, president of the Illinois Central Railroad. Referring to the operation of his company's trucking subsidiary, Mr. Johnston said: "We are confined, limited, and restricted to service which is auxiliary to or supplemental of our rail service. We can serve only points which are stations on our railroads. The shipments we transport in our trucks must be handled at rail rates under railroad bills of lading. Particularly restrictive is the requirement that what we carry in our trucks must have a prior or subsequent haul by rail. We cannot move shipments in our trucks to, from, through or between more than two keypoints, of which there are 27 on our railroad. The prior or subsequent rail haul restrictions, and the keypoint restrictions, are particularly burdensome, because as a result of them much traffic cannot be handled by truck at all.

"For illustration, we have a truck operating daily from Jackson, Miss., to Vicksburg, Miss., thence north to Clarksdale, Miss. When interstate freight arrives by railroad at Jackson, destined to points north of Vicksburg on our truck route, we cannot move such shipments on from Jackson to destination in the truck we have leaving that day. Because of the keypoint restriction in our certificate, we cannot move this freight the 50 miles from Jackson to Vicksburg on our truck. We are compelled by this restriction to put these shipments in a box car at Jackson and move them by *rail* to Vicksburg, and then, when the truck from Jackson arrives at Vicksburg the following day, put those shipments in the truck at Vicksburg. All this shadow-boxing of course means one or two days' delay."

Congressman John B. Bennett of Michigan has said: "As a result of the various conditions and restrictions that are applied to railroads in their use of motor vehicles, inefficiencies and waste cannot be avoided. That this situation prevails operates not only to the detriment of the railroads but also to the detriment of their patrons and of the whole shipping community, the public generally and the entire economy."

Besides making no sense, the policy is also grossly discriminatory in that only railroads are similarly restricted. Motor and water carriers can control other forms of surface transportation, and air carriers may engage in any mode of transport.

Policy Not Spelled Out

Public policy regarding single ownership of different transport modes stems from the Panama Canal Act of 1912, the Motor Carrier Act of 1935 (now Part II of the Interstate Commerce Act), the Civil Aeronautics Act of 1938 (now the Federal Aviation Act of 1958), and the Transportation Act of 1940. It is significant, however, that not one of these acts contains any language prohibiting transport diversification *per se*. The rules denying railroads equal opportunity to own and operate other forms of transportation are largely the result of interpretations given parts of the acts by the Interstate Commerce Commission and the Civil Aeronautics Board.

Thus, a fundamental question of national transportation policy has been decided not by legislative persuasion, but by administrative edict. And as Dr. John H. Frederick of the University of Maryland has said: "It is questionable whether this interpretation is in accordance with the public interest since it overlooks the interest of the shipping and traveling public in having available the best service that can be provided by utilization of different means of transportation under a single management and the convenience resulting from such arrangements."

Shippers and travelers are being deprived of a top-quality coordinated transportation service that they want and need and that railroads want to provide. Worse

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still, the inferior segmented service they are getting is costing far more than top quality service would cost, if railroads were free to use *all* the transportation tools available.

Threat to Public Carriers

Clearly, if such a situation is to continue, the future of public transportation in the United States is dim indeed. For transportation today does not have to be performed by public carriers; it may also be performed by private means. And this is exactly what will happen unless the public carriers are permitted to use all the transport tools available so as to do the job better and at lower cost than individual shippers and travelers can do it for themselves.

Already 90% of all travel in the United States is being done by private automobile, leaving only 10% to be divided among railroads, buses, and air carriers. This small share will not support healthy public carriers of any form. But instead of going after the 90%, public carriers are effectively consigned by public policy to competing among themselves for the meager amount that remains.

Public carriers are handicapped first by the federal excise tax of 10% that continues to be levied on those who use public transportation. Even more of a handicap, however, are the public policies that restrict single ownership of different transport modes. For these policies discourage the establishment of a truly coordinated transportation service — the one service that would enable public carriers to compete effectively for private automobile travel, because it could be made far superior to anything that the automobile, by itself, has to offer.

In hauling freight, the trend towards "do-it-yourself" transportation, and away from public carriers, is large and growing. In 1947, railroads and motor carriers under regulation of the Interstate Commerce Commission handled 77.7% of total intercity freight traffic in the United States, while only 22.3% was handled by private and other carriers not subject to economic regulation. Ten years later, in 1957, the share handled by public regulated carriers had fallen to 67.9%, while that of private and other unregulated carriage had increased to 32.1%.

This trend continues today, and it constitutes a threat of the greatest magnitude to public carrier systems, rail and highway alike. But the way to halt and reverse this trend is not to continue the same policies that gave it birth and encourage its rise. Rather, it is to give shippers the kind of public transportation service they want at a cost they are willing to pay. This means giving shippers a complete and coordinated transportation service, and to do that, there is no satisfactory alternative to single ownership or control of different transport modes.

What About 'Voluntary Coordination?'

Among transportation authorities today, there is no disagreement over the objective of single ownership which is more efficient coordination and use of the several forms of transportation. The only disagreement is over the methods proposed to achieve this objective. The alternative to single ownership, opponents say, is for carriers to coordinate their services voluntarily—to establish joint rates and through routes on shipments moving by two or more modes.

In the words of A. G. Anderson, general traffic manager of the Socony Mobil Oil Co.: "This is wishful thinking." For as A. E. Perlman, president of the New York Central Railroad, candidly pointed out: "Competing carriers can work with each other up to a point. But sooner or later, one or the other is going to find himself working against his own best interests in promoting the coordinated service. In other words, that carrier will discover he would profit more by going it alone, even though the total coordinated service might be more efficient or provide a better service to the customer. At that point, the basic responsibilities of management to its employees and to its stockholders doom the coordinated service."

Under separate ownership, each form of transportation is in competition with all others, and it is unrealistic to believe that any form will selflessly give up traffic to a competitor. Any lingering doubts that this is so should have been dispelled by past experiments and others now underway.

Joint Rates Unsuccessful

During 1958 and 1959, one large midwestern railroad entered into joint rates with two non-railroad affiliated common carrier truck lines operating in Michigan, Wisconsin, Minnesota, and North Dakota. In all of 1959, only 34 truckloads of freight moved under the joint rates. Another railroad that entered into joint rail-motor rate arrangements about 20 years ago handled only 20 truckloads under the joint rates in the month of October, 1959. In no instance on record have joint rates produced a realy significant volume of tonnage for either participating carrier.

The real problem, however, is not how common carriers are to divide a steadily decreasing share of total traffic among themselves; it is how to hold the traffic they now have and win back what they have lost to private means. Joint rates are of no interest to the private shipper who has purchased barges, trucks, or airplanes to handle his own transportation requirements, and such shippers, together with other unregulated carriers, account today for over one-third of all freight transportation service performed in the United States.

Private shippers will turn to common carriers only when they are assured of getting the coordinated service they want for less, or at least no more, than the cost of providing it themselves. Such coordinated service cannot be supplied by any of the forms of transportation acting independently, nor as a practical matter, is it reasonable to suppose that it could be provided voluntarily through establishment of joint rates and through routes. The only answer is to permit the establishment

Shippers Want Transport Diversification

Bills introduced in Congress in 1960 to permit transport diversification were supported by numerous shippers and shipper organizations. Some of the witnesses who appeared before an investigating House Subcommittee, and the statements they made in support of diversification were as follows:

Lowe P. Siddons, general traffic manager of the Holly Sugar Co. and a past president of the National Industrial Traffic League: "The enactment of bills H. R. 7960 and H. R. 9280 would be in the public interest for it would promote the national transportation policy which requires a railroad transportation system adequate to meet the needs of commerce, the United States Postal Service, and the national defense."

William H. Ott, general traffic manager of Kraft Foods, and president of the National Industrial Traffic League: "The League urges that legislation is needed to make possible a greater degree of common ownership of carriers in different transportation fields, at least in the field of highway transportation."

Caughey B. Culpeper, secretary and general manager, Atlanta (Ga.) Freight Bureau: "My organization, and the members thereof, feel that the one best chance which our national transportation policy has to be strengthened and improved is for us to change our concept of the transportation agencies themselves and to, by appropriate legislation, recognize that we have reached the end of an era in which we think about a railroad as a railroad, a truck line as a truck line, a water carrier as a water carrier and should begin now to permit the establishment of what will become integral transportation agencies, which can and will utilize whatever mode or type of vehicle or facility necessary to the prompt, expeditious and economical movement of individual shipments from origin to destination."

A. J. Kneesy, traffic manager, Brown and Williamson Tobacco Corp.: "If the utilization of two or more modes of transportation in the movement of our tonnage will produce better service, result in less damage, and cause the required transportation service to be performed at a lower cost, that is exactly what we want, and is exactly what everyone else should want.

"These desirable results, however, can be obtained only if organizations engaged in the transporting of this country's commerce can play the role of purveyors of transportation, rather than that of a railroad, a motor carrier, a water carrier, a pipe line, or an air line."

Walter K. Cabot, general traffic manager of Johnson and Johnson, who testified on behalf of the U. S. Chamber of Commerce: "The nation's shippers and traveling public should be provided with the best service possible through the utilization of different modes of transportation under a single management, with the convenience and economies possible from such arrangements. . . .

"The improved service which is possible through diversification of transport media can provide the public with a more efficient transport system than has been possible in the past. The principal beneficiary would be the traveling and shipping public who would be able to use the services of one company for a combination of forms of transport."

C. R. Potter, traffic manager, The Funkhouser Mills Division of the Ruberoid Co.: "It is our view that in order to further preserve and strengthen our economy in transportation for the future and insure the greatest strength ever in our national safety, we must support the fundamentals of these involved bills which are before you for consideration."

Farrell T. Wankier, Jr., assistant secretary of the National Wool Growers Association: "As far as our industry is concerned, we feel that the Interstate Commerce Act and the Civil Aeronautics Act should be amended to remove present restrictions which prevent one form of transportation from engaging in another merely because it is a different form of transportation."

Other shipper witnesses who expressed similar views included James Haley, vice president of traffic and transportation of the Koppers Co.; Charles A. Washer, traffic manager of the American Retailer Federation; E. W. Bauman, managing director of the National Slag Association; and Charles M. Naylor of the Black and Decker Manufacturing Co.

of true transportation companies, capable of performing service by any means or any combination of means.

SHIPPER SUPPORT

Shippers earnestly want and need the coordinated, low-cost transportation service that diversification can provide, and several of them, including spokesmen for large shipper organizations, have so expressed themselves to Congress.

Congressman Walter Rogers of Texas, who in 1960 introduced legislation (H. R. 7960 and related bills) to permit transport diversification, told an investigating subcommittee: "Over a long period of time I have been receiving letters and other communications from shippers, that is, from users of the various forms of transportation, not only those located in my own district in Texas but from shippers and users of transportation all over the country. These letters and other communications demonstrated, and continue to demonstrate, to me that the users of our transportation services feel quite strongly that the Congress should take steps to allow common ownership and operation of transport facilities of different kinds so that the existing artificial barriers to the rendition of fully coordinated transportation service may be broken down." Many of these communications were introduced by Mr. Rogers in evidence and are part of the record.

What shippers say is not the only evidence. The enthusiasm with which shippers have welcomed and used trailer-on-flat car service (piggybacking), which combines only a few advantages of just two forms of transportation, is ample proof of what shippers want and need and will support in the way of coordinated transportation service.

Piggyback has had and continues to have a dynamic growth. From almost nothing at the end of World War II, the volume of piggyback movement in 1959 totaled 415,156 cars, an increase of 50% over 1958. in the first 30 weeks of 1960, with freight carloadings generally down over one-half million from 1959, piggyback volume reversed the trend and increased over 35%.

In piggybacking, the cost of transporting freight is lower than by either truck or rail alone. The speed is usually equal to or better than truck, and the service is flexible. This is not to mention many important related advantages of piggybacking, such as reduction of wear and tear and congestion on the highways and improved highway safety. Yet piggybacking barely scratches the surface of the possibilities for better and more efficient transportation service that are inherent in full-scale coordination through diversification under single ownership.

Opposition to diversification has come mainly from carriers other than railroads, and it is in poor taste considering that the costly public facilities these carriers use in their operations are ones to which railroads contribute more in general taxes than all of the using carriers combined.

THE MONOPOLY MYTH

One of the arguments most frequently heard is that railroads would attempt to use diversification as a means to create a transportation monopoly. The validity of this argument has been questioned by the chairman of the Interstate Commerce Commission.

Testifying before the House subcommittee on H. R. 7960 and related bills, ICC Chairman John H. Winchell said: "We believe that the force and weight of this argument undoubtedly was much greater while certain modes were in their infancy. The extent to which it may apply under today's conditions would be one of conjecture. Considering the present-day strength of the various modes and the fact that the Commission was created for the purpose of protecting the public interest in a stable and enduring transportation system, the force of this argument may well be subject to question."

Transport diversification, as proposed in H. R. 7960, would not reduce nor change in any way the very effective protection against monopoly that is afforded by the nation's antitrust laws and public policy. It would not lessen the authority of the Interstate Commerce Commission or Federal Aviation Agency to control the assignment of operating rights, whether the rights being sought are new or already in existence.

Existing carriers of whatever mode would continue to be protected by the certificates of operating authority they hold from the Interstate Commerce Commission or Civil Aeronautics Board. New certificates, to the extent that they could be obtained by railroads or any other applicant, would have to meet all required standards and tests of these agencies, just as they must today.

All the proposed legislation would do is insure that railroads are not denied the right to use other tools of the transportation trade *merely because they are railroads*.

Even without the restraints to which Commissioner Winchell referred, the American people possess a vast "do-it-yourself" capability in transportation which is the best insurance possible against a monopoly by anyone or any group. Americans who have turned to private transportation for nine-tenths of their travel requirements, and a large part of their shipping needs, already have shown what they can and will do if public transportation is not entirely to their liking. What they would do should anyone seek to establish monopoly control at monopoly prices is plain to see.

That the monopoly argument of opponents is groundless is further proved by experience under systems of single ownership, both at home and abroad. The few railroads that owned trucking companies prior to passage of the Motor Carrier Act of 1935, and therefore have "grandfather" rights today, are examples to be found in the United States.

Such a "grandfather" operation, involving two western railroads and their trucking subsidiaries, was discussed by Lowe P. Siddons, general traffic manager of the Holly Sugar Corp., in his testimony on H. R. 7960. The railroads involved were the Chicago, Burlington

and Quincy; and the Denver and Rio Grande Western.

Mr. Siddons told the subcommittee: "The truck service these two railroads offer is quite satisfactory. Their service is used by the sugar companies. Several other independently owned large motor vehicle common carriers operate in the same territory and from and to the same points. These motor vehicle common carriers are prosperous. They continually have applications before the Commission for a large one to buy out a smaller one. . . .

"The motor carrier service rendered by the Burlington Railroad affiliate or that of Denver and Rio Grande Western Railroad, does not seem to have hindered the service of independently owned motor vehicle common carriers either in day-to-day service or in their ability to expand."

OUTSIDE THE U. S.

Only in the United States are railroads not permitted equal opportunity to own and operate other forms of transportation. In Canada, both the privately-owned Canadian Pacific Railway and the government-owned Canadian National Railways are heavily diversified not only in the field of transportation but in numerous manufacturing and service enterprises as well. The Canadian Pacific, for example, has substantial interests in water, truck, and air transport, as well as rail. It also is sole or part owner of several hotels and communications facilities, and engages extensively in development of petroleum, timber, and mining resources.

How diversification has worked on the Canadian Pacific and has benefited users and carriers alike was recently described by President N. R. Crump. Referring especially to his company's integration of its merchandise freight services, Mr. Crump said the objective was threefold: "(1) to eliminate duplicating and overlapping administration, operation, facilities and equipment; (2) to coordinate road, rail, air, and water transport with a view to achieving that degree of flexibility which will enable us to meet shipper specifications for transportation service; (3) to adopt and to apply, in this highly competitive area of transportation, modern marketing principles and practices."

Mr. Crump said that in surveying the possibilities for integration of his company's merchandise services, "we found ourselves in most areas operating three different agencies for the handling of merchandise traffic, and in one area there were four such agencies; namely, our express company, a trucking subsidiary, a coastal shipping service and railway less-than-carload service—each having separate administrative, operating, and soliciting staffs and separate handling facilities and equipment." He continued:

"A few years ago at Vancouver, on the Pacific Coast, where we had the four different agencies handling much the same type of traffic, we took steps to bring all four agencies under one local administration. This was largely in the nature of a pilot operation. It worked well. Recently, we have taken the further step of integrating the operations of these four agencies using joint facilities under the administration of a new department known as Merchandise Services."

In what was certainly one of the understatements of the year, Mr. Crump observed: "In this respect at least we have an advantage over American railways when confronted as we are with rapidly changing traffic patterns."

In industry generally, diversification has long been recognized as sound business practice. For it is well known that the greater the number and variety of products or services offered, the smaller is the chance of the entire enterprise going under if any one activity should fail. This principle of diversification is as sound in its application to transportation as it is to other industry—a fact amply attested to by the experience of the Canadian railroads.

A BASIC INJUSTICE

Removal of barriers to transport diversification is necessary also to alleviate in some measure a basic injustice under which railroads have long suffered. That is the injustice of requiring railroads—and only railroads—to provide and maintain all their own facilities, and in addition, to contribute heavily in taxes toward the construction, operation, and maintenance of the publicly provided transportation facilities used by their competitors. Certainly if this injustice is to continue, it should not be compounded by denying to railroads equal opportunity to use the facilities their taxes help to provide.

Transport diversification is thus a truly modern answer to a modern American need. By permitting transport diversification, this nation has everything to gain and nothing to lose. It stands to gain not only in less costly and more efficient transportation service, but also in strengthening of its essential transportation systems. And if any of the horrible things that opponents profess to see should come to pass, correction is merely a matter of additional legislation. In either case the question of whether this nation is following the right course, or is doing itself a grave disservice, will have been settled once and for all.

* * * * *

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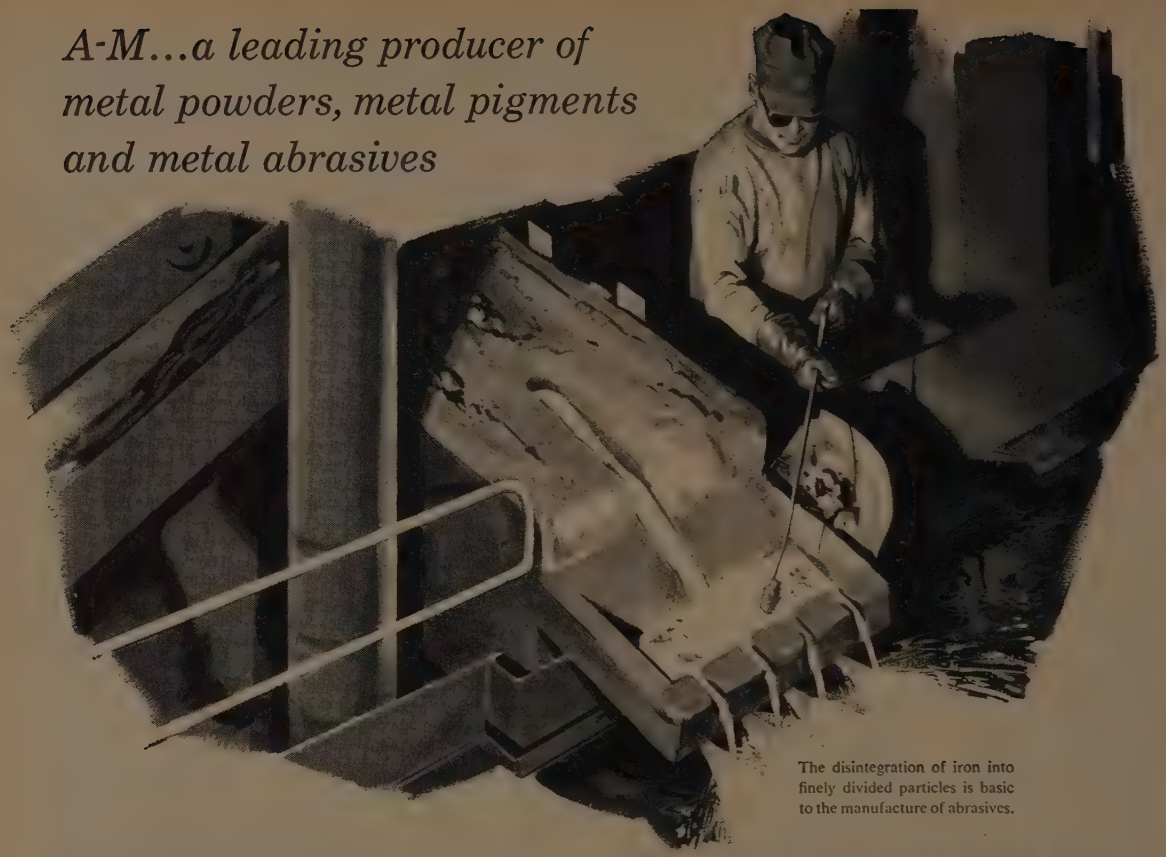

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Are Analysts' Techniques Adequate for Growth Stocks?

by Leland E. Dake

THE EXHILERATING PHENOMENA of a "growth" company—rapid growth in sales, climbing stock price, mergers and diversification—give such a company a special investment glamour that may obscure basic facts about the company's operations and create special problems for the Financial Analyst.

Not only are certain facts not readily apparent, but they also tend to be precisely those fundamental to a decision on the company as an investment.

It would seem that a great deal of knowledge would be current about a company that is attracting a great deal of attention—and this is nominally true. However, the very essence of being a "growth" company tends to make analysis more difficult. In addition, the techniques of most Financial Analysts seem better fitted to well-established companies directed by experienced executives and operating in industries marked by strong competition. The result is that key information about growth companies often will be overlooked in the casual analysis and may even escape the conscientious, dedicated assayer of financial values.

Several months ago I visited a well-known Eastern "growth" company that is very familiar to the financial community. My visit coincided with that of a well-known Analyst from a respected banking house. We visited with the same company executives, witnessed the same things and looked at much of the same data.

My purpose was to orient myself and our organization for a major management survey. The Analyst was reviewing the company's position (its stock was in considerable demand, selling at the time at about 30 times earnings.) The two of us were exposed to much the same information because my client reasoned that this was a good way for me to start securing the data needed to develop a survey plan and organize my staff.

We saw the company's plant, its products, its financial records and many of its key people. We listened to the executives answer what I considered to be some particularly intelligent, penetrating questions asked by the Analyst.

We left this company feeling exhilerated. It was exciting to hear great progress detailed and to learn about plans and projects that promised even greater growth. We had seen some marvelous new products and had leafed through some literature which opened up new development vistas for us. Sales were increasing, profits improving; there was an impressive backlog of orders and Uncle Sam had blessed this company with substantial business. In fact, the federal government was the company's biggest customer. We agreed that this truly was a remarkable business organization.

Some months later when a team of my associates was preparing our final report to the management of this company, I happened to meet the Analyst again. He was again reviewing the situation and appeared as enthusiastic as ever. What he had seen and heard the second time gave him no reason to feel otherwise. On the basis solely of the facts at the Analyst's disposal, I would have agreed with him.

But, at our second meeting, I no longer had any illusions about the company's rosy prospects or impregnable position! I now knew the company was vulnerable in many areas. The differences in our beliefs was the result of the amount of knowledge available to each of us.

The facts available to the Analyst consisted of data and observations given to him by the company's management, his own observations during a plant tour, and a review of management's forecasts. The management was quite sincere and gave him the facts as it saw them — a critical flaw in his analysis.

Management had not concealed its own weaknesses. This omission was not due to dishonesty or subterfuge. Management simply did not and could not reveal weaknesses it wasn't aware of.

By this time, however, I was aware of management weaknesses and the flaws in its plan for the future, because I had the benefits of my survey team's findings.

The differences in viewpoint between my opinion of this company and that of the Analyst can be traced directly to the facts available to us individually and, in turn, to the fact-finding approaches we were able to utilize.

The Analyst, of necessity, had to rely on much information that was subjectively biased and screened through the opinions and judgments of the company's management. On the other hand, my firm was commissioned to audit independently the company's organization, market position and production efficiency; and my staff had given me an objective view of the situation, based on what we had learned for ourselves. While the Analyst was receiving a subjec-

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tive impression of the company, I had received an objective analysis.

Our analyses were at variance because, in addition to the obvious advantage of having more time to spend on the assignment, and thus an opportunity to explore the company's operations in depth, my associates were analyzing two elements of the company's operations normally out of reach of the Analyst. They are:

1. Management capabilities of key executives through first-hand observations of their management methods.

2. The company's markets and products as their customers and competitors view them.

Our objective audit reported that this particular company had a well-meaning, aggressive, and enthusiastic management, but one that was also very naive about organizational methods.

We also found that much of the earnings endowed upon this fortunate growth company, by a truly phenomenal growth industry development, were being frittered away. Companies often "plow back" earnings, but this company was simply wasting money in bad organization and inadequate methods. The stockholders, impressed by the prospect of increased future earnings, may never get more than a small fraction of them.

Keener Management Needed

We also found that this company faced a sharp reduction in profit margins in the near future. The firm's major industrial product line —which also made a large contribution to its earnings because it had been in a seller's market for years— was now on the brink of a buyer's market. Since it would soon be overpriced in terms of the market, it was obvious that it would not sell much longer at past margins. Furthermore, as a result of past experience, the company was not oriented toward aggressive sales action. It has grown accustomed to merely offering its products by way of doing customers a favor.

The engineers on our survey staff discovered that many of the company's new products were greatly over-engineered and would have to be re-designed to be competitive because the original designs would result in unbelievable production waste and inventory problems.

The key point to remember about such a business is this: As long as its markets continue to expand relatively rapidly, and as long as Uncle Sam continues to favor it with large orders — many of which are the "cost plus fixed fee" variety — the major mistakes of management will be concealed and not apparent. The company will continue to grow and earnings will be "plowed back" into growth. Much of the re-invested earnings will be used for legitimate capital requirements, but some of it will be lost in frequent reorganization, duplications of staff, unproductive functions and significant amounts of unproductive engineering.

The greater tragedy is that company management is quite sincere in its pride over past accomplishments and optimism for the future. Management really doesn't realize it is doing a very poor job of managing the business. Managements of businesses of this type tend to believe that all of their changes in organization, the obsolescence of products, and the constant shifts and movement of personnel and facilities, are natural to growth companies.

Actually, executives of such companies are extremely fortunate to be under the umbrella of a growth industry. They tend, as a result, to look good on the surface and are generally regarded as outstanding businessmen. But an outsider who discovers the truth about such firms can't help but wonder what could be done for this company's stockholders by really seasoned executives—men from one of the older industries that had shaken down years earlier; men who understand techniques of organization, the importance of personnel, and how to get production at high efficiency.

Occasionally it is the task of the management consultant to tell the managements of such companies the facts of economic and business life, pointing out their problems and helping them solve them. However, getting people to change their minds and methods is never easy, and many growth companies do not exhibit the foresight of our client referred to in this article. Managements of many of these companies believe that their phenomenal performance is part of a pattern that can be readily projected into an even more rosy future.

Conditions Cited not Typical

The Analyst is immeasurably handicapped in situations like the one above. Fortunately, the conditions outlined above are not typical of growth companies; they are the exceptional situations. Many growth stocks are not vulnerable to the factors outlined above, and there are many other factors that influence the price of a security in any given market. Short-run stock-price influences might include:

1. The tenor of the market itself.
2. News that relates to the industry (news about missiles tends to push the electronic stocks up, and medical breakthroughs tend to bolster pharmaceutical issues).
3. Company rumors concerning new products or mergers tend to have bullish implications.
4. A certain amount of merchandising of stocks usually is also present.
5. Short-run financial policy considerations also influence a company's stock picture.

These, however, are factors normally of short duration. Over a brief period of time they can override the deeper problems of management outlined earlier in this article. In fact, the more basic internal flaws can be, and often are, so deeply buried that their results may not become apparent during any short period of company history.

They may never show up in sharp relief as major problems, but merely act as a hidden drain on what might have been an earnings performance as remarkable as sales performance often are. For example, there seems to be some growing disenchantment

with some stocks in the drug, pharmaceutical and electronics industries—even though the earnings records of growth companies in these industries are very good. On a closer look, it has become apparent that some of these companies are enjoying profit margins well above what can be anticipated over the long run. And that thought leads observers to the next questions: With those extraordinary margins, why aren't earnings even higher?

Generalities are dangerous and particularly so with regard to growth companies because each company is unique. Some companies are growing rapidly but already are proven and strong. Others are new and untried. Some companies are in industries that have a very sharp growth potential and others are enjoying remarkable growth in industries that have had little over-all growth.

While we cannot generalize about growth stocks, we can recognize that there are certain situations potentially dangerous, because earnings potential is being frittered away by hidden management mistakes that may result tomorrow in a substantial reduction in profits.

In most cases, the Analyst's sources and methods are reasonably satisfactory, particularly where industries have shaken down, competition is strong and managements seasoned. It is really only in the new growth situations that the deep-rooted influence of bad or inept management, and the true status of the company's products, in the market are apt to be obscure.

There is another vast area of "growth" business activity that may turn out to be illusory. This area embraces mergers and acquisitions, often typical of the so-called growth companies.

Perhaps more than at any other time in our history, the business community is full of promoters who are pushing mergers and acquisitions with a zeal akin to that of a worried mother trying to marry off a homely daughter. The promoters can't be blamed; the brokerage is sweet. But, these hasty matches often don't turn out well. The trouble usually is that too little attention is made to pre-merger planning. The result often is a mathematical incongruity: 1 and 1 do not add up to 2, but something more like 1½. The loss gets covered up in the combined statement, which shows growth in the aggregate, but not growth equal to the apparent potential.

Diversification Sometimes Questionable

The whole field of mergers and acquisitions may embrace so much scandalous waste that stockholders should be up in arms about it.

While the financial community often regards a merger optimistically, the management consultants in the middle often are somewhat more realistic, *or even pessimistic.* While there often are good sound business reasons for a merger or an acquisition — diversification, new combinations of products, skills or facilities, or a stronger marketing position—too often the assets and liabilities of all the altered relationships that result from the merging of two business organizations are not analyzed as carefully as those assets and liabilities that can be readily jotted down in neat columns of figures.

The waste usually occurs in two areas of intangible assets:

1. The multiple talents of the personnel of both organizations.
2. The long-term, carefully built customer or franchise relationships that have been created by both firms.

These happen to be *most precious assets of any company.* Unfortunately, while the dollars and facilities are treated with great care in any merger, the people generally are handled awkwardly, and the resulting internal readjustments almost inevitably weaken the position of the merged firms for a time—while the rearranged distribution patterns almost invariably result in a fluctuating marketing situation.

What happens to the people in a merger? Too often they are treated as if they were impervious to change, as if a new environment, altered motives, new working relationships, changed and perhaps reduced incentives, and opportunities meant nothing. Employees are frequently put together in a new team arrangement that completely changes the role or position they are accustomed to playing and gives a new meaning to their job (not always favorable in their eyes).

A merger, or acquisition, should be handled very carefully—not the way it is likely to be handled by the unskilled hands of a new growth company's management which are naive in organization matters, no matter how shrewd or capable they might be in other areas.

We complain of inflation, high costs and the danger of foreign competition, and we know they are caused by many things, such as relative increases in the supply of money, wage raises that exceed increases in productivity, and other influences. But, also involved are bad management practices that are wasteful of people through clumsily handled mergers, bad organization, and inefficient methods.

Some of our growth companies are a considerable source of these wastes. Their sales-minded and profligate managements (often quite sincere) are seldom aware of their own excesses and weaknesses.

How to Detect Weaknesses

Now that the general problems of dealing with growth companies have been presented, the question natu-

rally arises, "What can one do to detect these weaknesses?" Here are some pointers.

First, the Analyst should use a very sensitive approach to any cases which seem remotely suspicious. Second, he should look for other information which he might be screening superficially now—information about the company's competitors, for example. And third, where his firm has a strong relationship with a situation involving a new growth company, it might be wise to make a new check on the current situation.

Our firm does this for many banking and investment houses who wish to gain more information about some companies. It is like a physical check-up to assure that the company is healthy.

Again, this is appropriate primarily in the case of special new growth situations. They are glamorous, beautiful and lovely to look at, but they might turn out to be very expensive. We may not wish to avoid such "gorgeous creatures," but we had better be prepared to foot the bills!

Since the Analyst generally does not have the time or the tools to go into these situations in depth, it behooves him to look for the telltale symptoms that will give clues about what might lie below the surface; here are a few, not necessarily in the order of their importance.

1. Look out for cost-plus contracts. Companies thriving on these have developed some of the most wasteful organization practices conceived in our time.

2. Where do plowed-back earnings really go? Are they going into:

—Hastily designed facilities that fail to visualize new product plant payout needs, and will soon be outgrown?

—Wasteful production methods, perhaps caused by over-engineering?

—"Organizationitis" — the frequent springing up of new departments, divisions and changed relationships?

—Product boners released to the market, and then hastily called back, with resultant re-engineering dis-

guised as "research?" How much "R and D" is really "R and D," and how much the patching up of inferior product designs?

—Shotgun wedding mergers where the acquired company unwittingly gets stripped of some of its important assets: key people, basic drives and incentives, and customer relationships?

—Ulcerous communications, meetings all day, mountains of paper work?

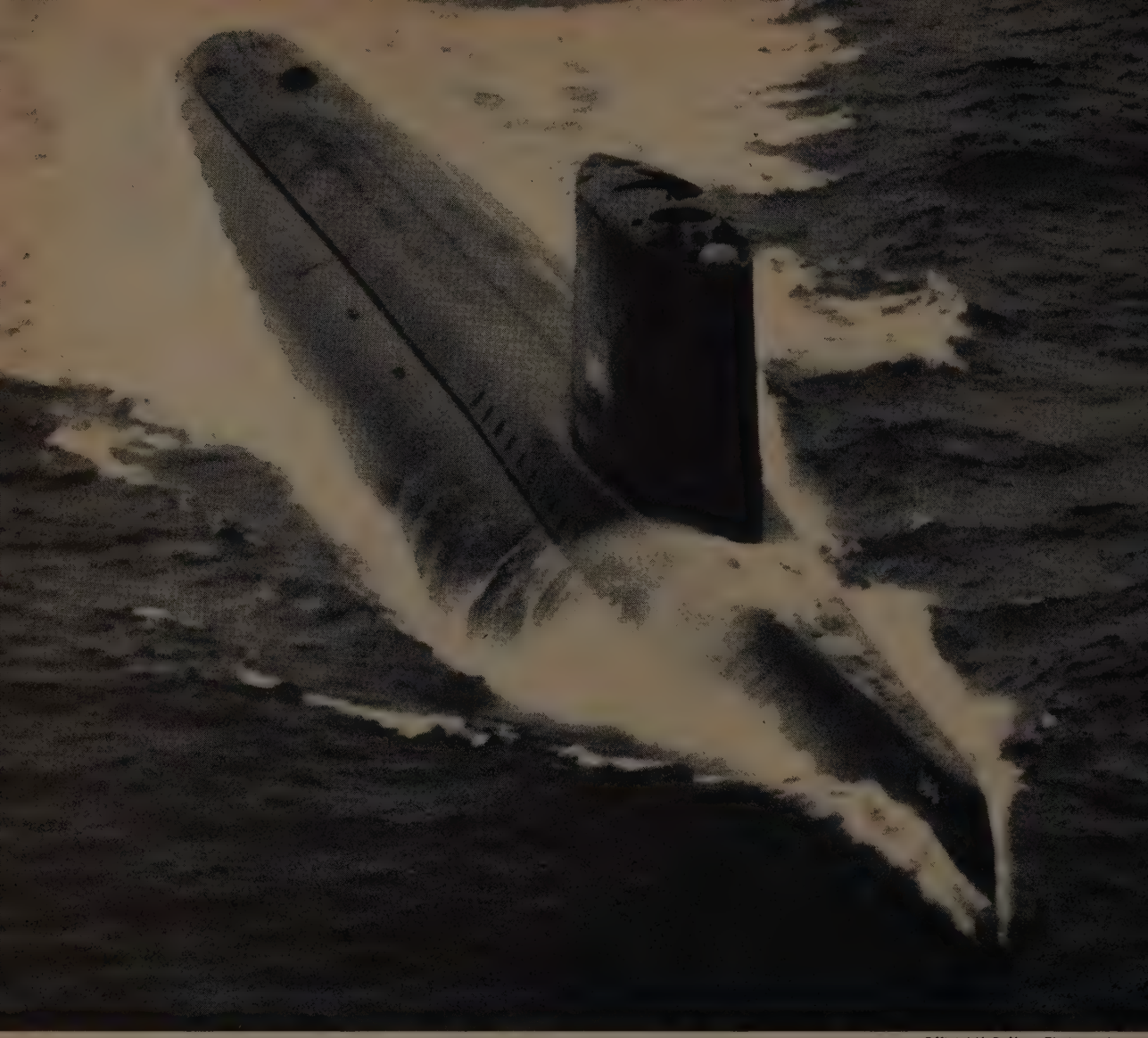
—Too many staff people—the result of bad organization — a large payroll of questionably productive methods and systems personnel and industrial engineers undoing the organizational errors that management is spawning regularly in the front office?

These suspicions do not indicate a predilection to forecast the doom of growth companies, or even to cast grave suspicion on them. Many growth companies are excellently managed, but *many are not*, and it is the Analyst's job to separate the two groups.

The industry climate is so favorable today that the weak sisters will be carried along for some time; and many of their managers will be heralded as top-notch businessmen—for a while! Some have already done well in stock options and earnings, but the unsoundness of their organization will sometime come home to roost. Let us hope they don't salt away all their earnings in their own stock!

Any Analyst, who has a client wishing to buy stock in one of these companies, would not want to tell that client to put these securities in a safe deposit box and forget about them! While some of these stocks are ideal for estate building, they are more generally apt to be the kind that should be kept on the desk at all times—*ready for instant review*.

The Analyst, with an important and respected role in the preservation of security values, has the continuing task of finding ways and means to separate strong growth situations from weak ones, and not merely being satisfied with current and superficial evidences of growth.



Official U. S. Navy Photograph

Power for a fighting fish . . .

The atomic submarine *U. S. S. Triton,* whose underwater global voyage recently made naval history, is equipped with Anaconda nuclear reactor cable which provides for the critical functions of power supply, position indication and temperature control. Developed in cooperation with United States Navy engineers, similar cable serves aboard all of the nuclear submarines thus far built in this country. In addition, uranium serves as the life-power of these man-made fishes—power enough to propel the *Triton* approximately 60,000 miles without refueling! Today, Anaconda is the nation's largest producer of uranium oxide concentrate, from which this super-fuel is made.

But nuclear energy has *other* vitally important applications, notably for peaceful purposes. Uranium concentrate, product of Anaconda's uranium ore-processing, is compressed into tiny ceramic pellets, each not much larger than an aspirin tablet. The energy from one such pellet could run a TV set for almost a year. Two dozen would furnish as much electricity as an average home would use in *three* years. And it's happening now! At Shippingport, Pennsylvania, the Duquesne Light Company's remarkable power generating plant utilizes a million of these pellets in a pace-setting operation which creates a bright pattern for the future. In the meantime, uranium makes life safer for most of us through radioisotopes which contribute much towards better products, better health, and which may help to provide better food.

Through its millions of tons of uranium ore reserves, through new copper sources such as the new El Salvador Mine in Chile, and through constant product research and development, Anaconda serves the nation in peace—and in the pursuit of peace.

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ANACONDA®

The Big Breakthrough in Beryllium

by Ethan A. Smith, Jr.

CALLED "THE MOST PROMISING STRUCTURAL MATERIAL OF THE SPACE AGE," AND THE "WONDER METAL OF THE FUTURE," Beryllium has already proved to be superior to most other metals in today's aerospace applications. Despite many obstacles relating to ore supply, processing difficulties, fabricating problems and high cost, Beryllium has fully justified the extensive research and development by the Atomic Energy Commission, the United States Air Force, and private industry during the past dozen years. Beryllium's unique combination of physical and mechanical properties has given it a wide range of actual and potential usefulness which entitles it to be called the "wonder metal of the present."

Perhaps the most dramatic proof of how far Beryllium metal has progressed in the past 10 years is the fact that before 1950 its use was limited to small-scale laboratory-type applications as a nuclear reflector or moderator, whereas today it is used in more than a score of different end products in the aircraft and missiles industry alone. Even more important than this, however, is the fact that this extremely strong yet lightweight metal is now well beyond the "small output" or "ones-and-twos" stage of manufacturing. Today certain Beryllium products, machined to extraordinarily close tolerances, and in intricate geometries, are being turned out through the use of tape-controlled, fully automatic machine tools.

One Beryllium fabricator in Long Island, geared to turn out as many as 5,000 complete, all-Beryllium gyro-housing units in a matter of weeks, uses tape-programmed lathes that reduce set-up time, machining, and costs by as much as 25%. Magnetic tape machines with recording and reproducing units that can be quickly adapted to almost any type of machine tool are also being used to speed up output of precision-finished products. Besides making possible volume production with a high degree of accuracy, these new machines provide the long-sought goal of repeatability in Beryllium fabrication without sacrificing the precision tolerances which Beryllium—unlike most other metals—can hold and maintain over a wide range of operating temperatures and stresses.

Now on the threshold of a new expansion of explosive character, the Beryllium industry did not begin in earnest until the development of the U. S. Atomic Energy Program. Starting with its use as a reflector in the Materials Testing Reactor, at AEC's National Reactor Testing Station in Idaho (erected in 1950), Beryllium's combination of high atom density with low atomic weight and low absorption cross section soon made it the only metallic element suitable for a chain-reaction moderator and one of the best materials for use as a neutron reflector. In 1951 the AEC first established facilities to produce Beryllium metal in volume, boosting production from several hundred to approximately 40,000 pounds annually. In late 1956 the AEC contracted with the two private producers for a total of 200,000 pounds annually for five years beginning in 1958.

Actually, of course, the history of Beryllium begins prior to the 20th century. Discovered in 1798 by the French chemist Louis Nicolas Vauquelin, and named glucinum (variantly glucinium) because its soluble salt had a sweet taste, Beryllium was first prepared in highly pure form in 1898 by another Frenchman, Lebeau, but only in minute quantities. In 1913, Fichter of Germany produced the first workable quantity of relatively pure Beryllium. Finally, in 1916 Hugh S. Cooper, in the United States, made the first sizable ingot of Beryllium. Ten years later Michael G. Corson discovered the hardening effect of Beryllium on copper, which gave rise to an entirely new family of materials variously known as Beryllium bronzes or Beryllium copper alloys. However, these historical observations are not the subject of the present article, but rather the uses of the pure metal itself.

The Beryllium Corporation of Reading and Hazleton, Pa., was founded in 1929. The Brush Beryllium Company of Cleveland, Ohio, was incorporated in 1931 to continue research and development work of Beryllium initiated by Brush Laboratories Company in 1921. Clifton Products, Inc., organized in 1939, discontinued making Beryllium products several years ago. Thus, at the present time, there are only two companies in the United States processing beryl ore into Beryllium metal products. Each of the two producers employs different extractive processes to produce Beryllium oxide from beryl ore, but the final stages of the rather complex chemical process, involving the conversion of Beryllium hydroxide to Beryllium fluoride, and the subsequent reduction of the fluoride to produce Beryllium pellets are similar.

During the period 1949-1959 industry sales (including Beryllium alloys) increased from $6.6 million to $37 million. The recent spurt in Beryllium usage can be emphasized by noting the sales situation of the last two years. In 1959 industry sales totalled $37 million compared to $27.5 million the year before—an increase

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of approximately 34% in 12 months. Industry is predicting a similar percentage increase for 1960, the increase being attributed principally to the growing demand for products fabricated from pure Beryllium. The Beryllium Corporation's net sales for all products in 1959 were $21 million.

Beryllium metal, oxide, and alloys are produced in sizable quantities by Pechiney in France. Small quantities of Beryllium copper are also produced by Nippon Gaishi Kaisha, insulator manufacturers of Nagoya, Japan. The Beryllium Corporation, however, is the world's largest producer of Beryllium copper and other Beryllium alloys — Beryllium aluminum, Beryllium nickel, Beryllium magnesium aluminum, to name three —and is a major producer of Beryllium oxide for use as a ceramic refractory material.

As we have seen, Beryllium metal is the only metallic element suitable for use as a moderator in nuclear reactors, and a superior material to reflect stray neutrons into the core and thus increase the power that can be abstracted from a given reactor. Consolidated Beryllium, Ltd., which is jointly owned by The Beryllium Corporation of Reading and Imperial Smelting Corporation, Ltd., of London, the latter a wholly owned subsidiary of Consolidated Zinc Corp., Ltd., produces nuclear-grade Beryllium and will soon produce Beryllium-copper master alloy. In addition, Consolidated Beryllium, Ltd., recently announced the acquisition of Milford Haven facilities of the United Kingdom Atomic Energy Authority. This facility principally produces Beryllium oxide and Beryllium hydroxide.

PROPERTIES AND CHARACTERISTICS

In order to explain the dynamic growth of the Beryllium industry in the past few years, we should examine the rather unique properties of the metal which are becoming increasingly known to designers and engineers in all fields of present and potential applications.

Comparable to steel on a strength to weight ratio basis—yet lighter than aluminum, having an extremely high melting point (2345° F), possessing excellent thermal conductivity, nonmagnetic yet a good conductor of electricity, Beryllium on the basis of these properties alone is exceptionally well adapted to the design of aircraft and missile structures. It resists excessive oxidation up to temperatures as high as 1,400° F, and retains more than half its original yield strength (resistance to distortion under stress) up to 1,000° F. Chemically similar to aluminum, Beryllium forms a protective oxide skin on exposure to air from which it derives its great stability at temperatures up to red heat.

These, and other characteristics, make it ideal for precision instrumentation and guidance components in missiles and rockets, as a material for heat sinks (devices that absorb heat energy in missile systems); wing leading edges of supersonic aircraft; aircraft brake disks; underwater instruments; high-velocity test equipment; accelerator targets; aircraft fasteners; gas turbine engine parts; rocket engine components; waveguides (ducts for guiding ultrahigh frequency waves); and canning material in gas-cooled reactors. Beryllium, of course, is still of primary importance in nuclear applications as well as for X-ray tube "windows," one of its earliest uses. The most significant Beryllium development on the horizon, however, concerns its use as a structural material for high-speed aircraft, missiles and spacecraft.

PROBLEM AREAS

Four main problem areas so often mentioned in connection with increased usage of Beryllium must be outlined as completely as space limitations permit. These concern cost, availability of beryl ore, toxicity, and the brittleness (or lack of ductility) of the metal itself.

Cost—Beryllium is an expensive metal. In the late 1940's, a pound of the pure metal sold for between $100 and $150. When the AEC plant went into operation about 1951, the cost of Beryllium dropped 58 to 60%. Later, when the AEC placed contracts for private industry in 1956, another reduction of 15 to 20% was realized. If present volume is doubled, it is estimated that a further reduction of 15 to 20% could be effected. In July of 1959, *The American Metal Market* quoted the following prices: Beryllium metal, 97% pure, lump or beads, f.o.b. Reading or Cleveland, $71.50 per pound; reactor-grade Beryllium, on contract to the AEC at the rate of 200,000 pounds annually for five years, starting in 1958, $47 per pound. However, although these contracts have been later amended, the new price has not been publicized by the AEC.

But one fact about cost has already been proven by past performance: as volume increased, price-per-pound decreased. Yet, increased volume is not the only answer. A much greater cost reduction can be achieved by improving methods of fabrication. The "hot pressing" method of producing Beryllium billets (chipping and grinding the raw, unconsolidated ingot into fine-mesh powders and hot-pressing these in graphite molds under vacuum) is costly from the standpoint of both the producer and the fabricator. The Beryllium Corporation and the U. S. Air Force are currently sponsoring research and development programs aimed at improving Beryllium to a point where it can be fabricated by the more conventional metalworking methods of casting, forging, extrusion and rolling. Extruded rods and shapes of pure Beryllium are now a practical reality, and many fabricators — manufacturers of the finished product or component — prefer to machine from extruded stock rather than from the hot-pressed material.

Availability of Beryl Ore — The Beryllium industry has never been put to the test of having to supply more material than it was capable of producing. The industry is confident that substantial increases in the supply of beryl ore can be made available as uses develop.

Beryllium is present in more than 30 different minerals, and occurs sporadically in 50 others, but of all these the only mineral thus far available for industrial consumption is beryl. This material, a complex Beryllium-aluminum silicate containing just under 14% Beryllium oxide and only 5% Beryllium, is difficult to

find in large quantities; the actual ore used averages about 12% Beryllium oxide and 4% metal content. U. S. consumption of beryl ore was approximately 8,000 tons in 1959, but almost all of this was imported.

World supply of beryl, however, has been adequate and has increased from a wartime high of 6,000 tons in 1943 to 13,000 tons in 1956. Twenty-two countries produced beryl in this period, the seven largest being Brazil, Mozambique, Argentina, Belgian Congo, India and South Africa (Rhodesia and Nyasaland) and the Union of South Africa. In 1958 the United States produced 463 tons of beryl, less than 8% of consumption. Newly discovered deposits of some 300,000 tons at Kings Mountain (North Carolina) in the form of as yet unrecoverable spodumene pegmatite may soon substantially increase domestic sources of beryl.

At this time it is difficult to make a valid estimate of potential Beryllium ore supply in relation to potential demands of explosive character. The industry is confident that the existing supply can be substantially expanded and efforts to find and develop large deposits within the United States reached proportions, during the summer of 1960, that promise to overcome the restrictions of hand-labor mining methods.

As to production capacity for Beryllium metal, it appears that industry now has sufficient capacity to supply all immediate and future known requirements for Beryllium products. Both Brush and The Beryllium Corporation are currently undergoing multi-million dollar expansion programs that will increase output of the pure metal in both billet and rough-machined components considerably above levels of 1959.

Toxicity — Sufficient experience has now been accumulated from producers and fabricators to demonstrate that the toxic effects of working with Beryllium can be effectively controlled by an integrated program consisting of medical, personal and industrial hygiene elements. As far back as 1948 the AEC established maximum allowable concentrations of Beryllium in the atmosphere as standards of safety for persons in and around plants. These limits, while stringent, are not difficult to meet. Where the recommended exposure criteria are enforced, AEC observers report a complete absence of lung involvements traceable to Beryllium dust or fumes.

It has been repeatedly demonstrated by producers, precision machining companies, instrument manufacturers, aircraft companies and others who have long worked with Beryllium that a safe operation can be maintained with reasonable diligence. Actually the bulk material and finished product can be manually contacted, carried, or held without any danger of toxic effects.

Brittleness or Lack of Ductility—Ways must be found to make Beryllium more ductile. Lack of ductility (ability to be permanently drawn out or hammered thin) prevents the economic quantity fabrication by conventional metalworking techniques. The solution of this problem is the primary objective of much current research and development by all components of the industry. Areas of investigation include purification and alloying. Nevertheless the present state of the ductility problem does not preclude the use of Beryllium in many structural parts and applications.

Beryllium's brittleness is one of degree only. Inertial guidance systems utilizing Beryllium components are in production with newer designs leaning more and more toward Beryllium. A development effort on Beryllium fasteners, sponsored by the Air Force, should lead to a suitable design to offset the brittleness factor. Beryllium is one of the most promising materials for missile nose cones and may be the answer to the problem of re-entry into the earth's atmosphere.

The presently available grades of Beryllium are definitely usable in such applications. However, when further research and development are successful in the area of providing greater three-dimensional ductility, substantially wider fields of structural uses will undoubtedly open up.

Machining—No longer considered a "problem area," the machining of Beryllium has been aptly characterized as "different, but not difficult." Much has been learned about this once irksome problem, and many improvements made in the machinability of the sintered billet or extruded rod. Despite the fact that Beryllium is susceptible to surface damage, brittle fracture, and chipping or breaking ("spalling") at the exit of drilled holes, almost anything that can be machined in aluminum can be machined in Beryllium. The only qualification here is that the fabricator must have expert machinists, suitably designed machine tools, adequate inspection equipment and—above all—planning, methodizing, and proper sequence of operations. Extremely fine surface finishes as well as intricate contours, precision-tolerance holes as small as .014″ diameter, and extremely thin-wall sections are being machined in Beryllium almost on a routine basis in Berylco shops and elsewhere. Besides the two producers, there are approximately a dozen precision machining sources specializing in Beryllium end products. Representative of these are such firms as Leemath, Inc., of Syosset, L. I.; Speedring Corporation of Detroit, Mich.; American Beryllium Company of Sarasota, Fla.; Alsca Beryllium Machining Corporation of Valley Stream, L. I.; United States Beryllium Corporation of Los Angeles; and Pioneer Astrometallics of Chicago, Ill.

CURRENT RESEARCH AND DEVELOPMENT

Answers to some of the more advanced fabrication problems may soon be forthcoming from research and development programs currently being conducted or planned by the Federal Government and private industry. The challenging problem of keeping materials development abreast of space and ballistics-vehicle evolution is being closely studied by a number of government agencies.

The U. S. Air Force has sponsored research on proj-

ects such as purification, alloy development, casting, joining, fusion welding and braze welding, forging, sheet rolling, and the toxicity problem. The Budd Company of Philadelphia is conducting extensive research in all forms of welding of Beryllium, including arc and resistance spot welding.

The inherent attractive features of the metal had, of course, long been recognized by design engineers in terms of high strength-weight ratio characteristics so essential for aircraft and missile structural applications. The task of selecting the most urgent research needs and the degree of importance of each was heightened by the fact that the great majority of the earlier work under AEC sponsoring was classified.

At the request of the Department of Defense, the National Academy of Sciences' National Research Council has conducted investigations into the problems of Beryllium resources, toxicity, and the use of Beryllium metal in airframes. The U. S. Bureau of Mines has been sponsoring geological research to locate additional domestic sources of beryl ore as well as research on methods of recovering beryl from pegmatites, ore-dressing tests, and the separation of beryl from mica, feldspar, quartz, and other minerals.

Some idea of the broadened and accelerated research programs of the U. S. Air Force and Navy can be had from the following list of titles and contract numbers of a few of the Beryllium research projects now current or completed.

1. Production of Beryllium sheets finished flat to gage—AF 33(600)-35829.
2. Development of extruded Beryllium shapes—AF 33(600)-36931.
3. Beryllium forging program—AF 33(600)-36795.
4. Beryllium casting—AF 33(600)-37902.
5. Research on the problem of ductility in Beryllium —AF 33(616)-5300.
6. Beryllium joining—AF 33(616)-5913.
7. Beryllium crack propagation and effects of surface condition—AF 33(616)-5978.
8. Beryllium research and development in the area of composite materials—AF 33(616)-5912.
9. Beryllium research for development in the area of casting—AF 33(616)-5911.
10. Development of wrought Beryllium alloys of improved properties—AF 33(616)-5719.
11. Structural evaluation of Beryllium produced by several processes—AF 33(616)-5180.
12. Electron beam melting of Beryllium, etc.—AF 33(616)-5603.
13. Toxicity of Beryllium—AF 33(600)-37211.
14. Fusion welding of Beryllium — AF 33(616)-6413.
15. Techniques to produce random crystallographic orientation in Beryllium sheet—AF 33(616)-6616.
16. Development of techniques for production of Beryllium fasteners—AF 33(600)-39728.
17. Fabrication of Beryllium wire — NOa(a)59-6030-C.
18. Development of ductile Beryllium ceramics—NOas 6036-C.
19. Development of high-purity Beryllium — NOas 59-6242-C.

BERYLLIUM IN THE SPACE AGE

The outlook for Beryllium as a new, useful material with outstanding physical and mechanical properties is particularly bright. There can be no question that the demand for Beryllium metal will expand in almost geometrical proportion to meet the rapidly increasing need for high-quality engineering materials essential to the growing technological requirements of the Space Age.

As has been pointed out earlier, Beryllium metal has already achieved the "big breakthrough" into high-volume, high-speed production combined with extreme dimensional accuracy and tolerances on the order of millionths of an inch. Finally, the major problem of reproducibility, or repeatability on a mass-production scale, has been successfully achieved in a material that is ideally adapted for holding close dimensions and tolerances under extreme conditions of temperature—such as those encountered in supersonic aircraft operations and military or scientific space-vehicle flight.

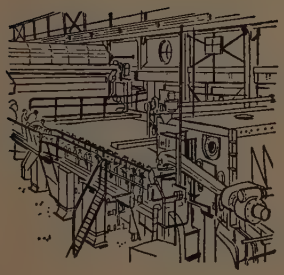
With continued research on the part of Beryllium producers, fabricators and consumers, including the U. S. Air Force, Navy, and Atomic Energy Commission, the few remaining barriers such as cost, ductility, and certain fabrication problems will be overcome in a relatively short time. But even in terms of present markets, applications and fabrication techniques, Beryllium has already proved itself as one of the outstanding metals of the Space Age.

THE FINANCIAL INDEX

Articles appearing in *The Financial Analysts Journal* are also indexed in The Financial Index, New York. The Financial Index is issued weekly and prints an average of 4,000 references to 2,000 securities. It lists significant mentions of all securities and industries in 400 U. S., Canadian, British, and Japanese financial publications, including brokerage house reports, magazines, newspapers, advisory services, and exchange documents.

To mark its 26th issue, The Financial Index instituted this month a Single Issue Service so that subscribers whose attention is drawn to articles in publications they do not receive may obtain them directly from a central point. Editor of The Financial Index is Corinne Silverman, research specialist listed in "Who's Who of American Women." The office is located at 1295 Madison Avenue, New York City.

there's more to Cities Service than meets the eye!



It takes giant machines to turn rags, straw, wood and other fibrous materials into paper. The huge "wet end" of a machine shown above is used in making stretchable papers.

This year our paper industry will produce more than 68 billion pounds of paper. It will take over 200,000 people to manufacture it.

And more than 400,000 people work in paper and allied-products industries to produce the myriad of paper products we use. Yet few of us realize the huge production task involved in manufacturing the paper we need.

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Memo to Shareholders of United Gas Corp. from F. M. Odom, Vice President

UGC EMPLOYEES ARE IMPORTANT SHAREHOLDERS

More than a quarter million shares of United Gas Corporation stock are held by United Gas employees and their families. Among our more than 50,000 shareholders, United Gas employees, directors and their families, as a group, represent our fifth largest shareholder. We feel that this employee interest in UGC stock is evidence of confidence and enthusiasm on the part of the people who know United Gas better than anyone else. We're proud of our employee-shareholders and they, in turn, are proud of United Gas.

UNITED GAS CORPORATION

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Headquarters, Shreveport, La.

WORLD'S LARGEST HANDLER OF NATURAL GAS

A Not-So-New-Era in the Stock Market*

by J. Fred Weston

I. Previous Study

In an article written on the stock market which appeared in early 1956, I made the following statement:

"It would appear that stock prices at the present time are rising in a manner which partakes of both cyclical and secular influences. The cyclical component of current stock market prices is subject to reversal. The secular component, however, promises further growth —a possibility to be recognized by newspaper writers and others dramatizing the stock market whenever it reaches higher levels."[1]

After some statistical analysis and discussion the article concluded as follows:

"In view of the financing needs of corporations in the next decade and the appreciable portion of such external financing that must come from equity sources if balance in the financial structure is to be attained, equity prices must be attractive. While equity financing has increased during the past year relative to previous years, it still has not attained the volume necessary relative to total financial stability needs of corporations. It is reassuring, therefore, to observe that the data presented on the relationship between Gross National Product and stock prices indicate that current stock prices are not excessively high in terms of long-run secular growth patterns."[2]

The last sentence particularly was ridiculed by well-known and highly regarded financial services shortly after the article appeared. At the time of the article the Dow Jones Industrial Average stood at 442. The article had commented that further rises were likely to be interrupted by cyclical swings of only moderate proportions. The subsequent behavior of the Dow Jones Industrial Average has substantiated this. The average rose from 442 to a level of 525 by early 1957. It dropped back to 420 by the late summer of 1957 and then began another rise which had taken the market to a level of 680 early in 1959 from which position it dropped back to 640 and has since returned to the 680 level at the end of 1959.

Despite the fact that time has dealt kindly with the remarks in that article I should issue a disclaimer. The intent of the article written in 1956 was not to provide a method for forecasting the stock market. The focus of the article was both broader and narrower. It was broader in that it sought to draw upon a wide variety of economic forces which suggested that the performance of the equity markets had to behave in a certain pattern if long-run needs of the economy were to be met. The article was narrower in that it concentrated on only one of the many possible methods that might be used for forecasting the level of the stock market.

The main statistical relationship developed by the article was that the Dow Jones Industrial Average appeared to be related to the total level of business activity in the following manner. The Dow Jones Industrial Average would be equal to 28 points plus .97 Gross National Product. Roughly speaking, in view of the degree of variation in a statistical relationship of this sort, the DJIA appeared to be equal to about the level of GNP plus 28 points. For illustration, with GNP estimated at some 480 billion dollars for the year 1959, one would expect on the basis of the formula the year end average of the DJIA to be roughly in the area of 500.

The DJIA is at time of this writing around 680 which gives us two figures for comparison. However, I wish to underscore and state as emphatically as I can that the purpose of this formula was not to provide a forecasting device as such. The burden of the article and the main function of this formula was simply to emphasize that with the growth in the economy one could expect a growth in corporate earnings, a growth in corporate dividends and a proportional rise in the Dow Jones Industrial Average. The article emphasized that it was not surprising that in 1955 the Dow Jones Industrial Average had risen above its 1929 high, but that the surprising thing was that it took a quarter of a century for the DJIA to accomplish it. The surprising part of this relationship could follow either from the fact that the market was too high in 1929 or that it made its recovery too slowly in the subsequent 25 years.

*The Bureau of Business and Economic Research of the University of California, Los Angeles, granted research assistance of Robert McKenzie and Rodney Klein to aid in the development of the statistical materials. I am grateful to the members of the Financial Analysts Seminar, under the direction of Marshall D. Ketchum, who invited me to present these ideas while they were not yet fully developed and whose keen criticisms and searching questions contributed greatly to my understanding of the subject. Above all I am indebted to Benjamin Graham who suggested the original topic and whose many insights were drawn upon from numerous discussions.

1. J. Fred Weston, "The Stock Market in Perspective," Harvard Business Review (March-April 1956) p. 75.

2. Ibid., p. 79.

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Table 1

Fundamental Factors Influencing Market Levels

A. Earnings and Dividends
   1. Dividends (current)
   2. Earnings (current)
   3. Number of shares of common stock outstanding
   4. Trends in profits
      a. capitalization rate changes
      b. relative capital and labor costs
      c. growth rate relative to the industry and other firms in the industry
      d. possible union encroachment upon the profit margins
      e. government policies, general business conditions (i.e. level of GNP) and industry factors as they effect the firm's profit outlook
      f. competitive structure of the industry

B. Market Psychology
   1. Psychological factors as one determinant of capitalization rates
   2. Popularity of various forms of equity (i.e. mutual funds, warrants attached, etc.)
   3. Popularity of romantic growth industries
   4. Attractiveness of small firms for venture capital
   5. Advertisement and notoriety from merger plans

C. Attractiveness of Equities Relative to Other Forms of Real and Financial Investment
   1. Amount of savings
   2. Allocation of savings between debt and equity
   3. Flow of funds to institutional investors (who may or may not be committed to common stock investments)
   4. Potential demand arising from the sale of variable annuities by life insurance companies
   5. Rate of capital investment by business firms
   6. Dividend policies of corporations
   7. Expectations about future price level behavior (inflation)

D. Government Policies
   1. Federal Reserve policy with regard to (1) stock margin requirements, (2) the money supply (i.e. availability of funds), and (3) interest rate
   2. Treasury spending and financing policies
   3. Allocation of funds and credit to designated economic sectors (i.e. housing, small business, etc.)
   4. Tax policies as they effect (1) form of business organization (i.e. corp., partnership, etc.), (2) profit margins directly through rate changes, (3) depreciation and accelerated depreciation
   5. Tax policies influencing the attractiveness of stocks to investors (i.e. capital gain provisions, credit for dividends)
   6. State and local tax policies and attitudes toward industry

E. Foreign Capital Flows
   1. International outlook
   2. Flow of capital between nations
   3. Stock values abroad
   4. Relative growth rates of U. S. vs. foreign countries
   5. Profitability of foreign investment by U. S. firms
   6. U. S. government assistance to developed and underdeveloped foreign countries

But the point I sought to emphasize and to underscore was that with the growth in the economy one could expect stock prices to grow and that one could expect that the long term pattern of growth in stock prices would be interrupted from time to time by relatively moderate bear markets. The article suggested also that the experience of 1929-1933 was not characteristic of the cyclical behavior of the economy as a whole nor of the stock market.

But nevertheless, a formula was presented and since there is a difference between the results indicated by the formula and the present level of the stock market, it raises a fundamental and nagging question. Is the stock market at this writing some 200 points too high and if so what will be the consequences? This article, therefore, will be devoted to a forefrontal attack on the question: Are there any basic economic foundations for judging the value of the stock market?

II. Basic Economic Factors

As background in approaching the subject matter of how to evaluate the level of the market, certain fundamental economic characteristics have to be taken into account. These are set forth in *Table* 1. Since the nature of the items in *Table* 1 are relatively familiar, since they have been alluded to in one form or other from time to time in the past, they will not be discussed in detail.

Rather these materials can be organized more briefly in terms of demand and supply factors as set out in *Table* 2. It is useful to organize the factors influencing the stock market into demand and supply factors as a necessary and valuable reminder that stock market prices are prices and as prices they are subject to the same fundamental influences.[3]

Numerous approaches have been made to price-setting in the securities market. These different methods reflect demand and supply factors in different degrees and to a different extent. The next part of this paper will deal with a summary review of different approaches to setting the normal value of the Dow Jones Industrial Average. I will organize these different methods in terms of the underlying theory or logic involved in the method whether the authors of the method recognized

3. In this connection it might be useful to observe parenthetically, but nevertheless very much to the point a paragraph from Bernard Baruch's autobiography in which he observed that the most valuable course he took in college was a course in economics from Professor Simon Newcomb at the New York University. Professor Simon Newcomb made an observation which Baruch said he remembered in his after years and was the formula by which he became a multimillionaire. The formula was this: when prices go above their historical norms the quantity demanded tends to fall off and the quantity supplied tends to increase and as a consequence prices will fall. When prices are below their historical normal level the quantity demanded is higher and the quantity supplied begins to contract; as a consequence prices will return to their historically normal level. Baruch said that most investors fail to keep this historical perspective and when prices are high they become convinced that they are going to go still higher; when they are low investors become convinced that the country never will recover and stay pessimistic. By having this sense of historical perspective Baruch said he had the courage of his convictions repeatedly and by having the courage of his convictions he became a rich man. This illustrates why I think it worthwhile paying homage to basic factors of supply and demand even when talking about the security markets.

Table 2

Fundamental Factors Organized as Supply and Demand Influence

A. Demand

1. Earnings
2. Dividends
3. Growth in the economy, industries and firms
4. Competitive structure of industries
5. Tax patterns
6. Price level movements
7. State of confidence

B. Supply

1. Interest Rates
2. Amount and distribution of savings
3. Capital spending programs by business, government and individuals
4. Level of disposable income and its distribution
5. Amount of stock market credit
6. Money market conditions, especially Treasury and Federal Reserve Policies

the basic theory implicit or not. One of the functions of this exposition will be to lay bare the theory that is implicit in these methods since every valuation of stock market values or individual business firms does have embodied in it an implicit theory. This presentation shall not give the author of the method because it is not the intention here to criticize anyone or to seek to discredit any security service by referring to its method of calculating the value of the Dow Jones Industrial Average. Furthermore, since the emphasis is simply on different approaches and techniques, it is unessential as to what particular group would be identified with the method.

III. Extrapolation of Historical Data

One fundamental approach to setting stock market values is a direct extrapolation of historical data. *Table* 3 sets forth a summary of methods which use the technique of extrapolating historical data by a trend line. While most methods actually involve some implicit historical extrapolations, none are so direct in their reliance upon historical data as is this method.

The first method set out in *Table* 3 is an arithmetic trend line, obtained by fitting a regression line to past data. Starting from a level of 400 in 1954, the equation indicates that the stock market will rise by 10 points a year. This method is clearly invalid, because economic time series conform most generally to geometric growth curves. Witness the frequent references to the growth of productivity or Gross National Product at 2.5 or 3 or 3.5, etc., percent per year.

Accordingly, the geometric growth curve formula in *Table* 3 appears more applicable. It is in the form of the growth of the DJIA at a compound interest rate of 3%. But even this formula suggests values some 200 points below current levels.

The two remaining formula in *Table* 3 are basically the same in concept as the geometric growth curve. A moving average will behave the same as the geometric growth curve, if the cyclical component of prices is regular and the length of the moving average is chosen to coincide with the period of the cycle.[4]

The warranted value formula is based upon an exhaustive study of the relationship between the growth of the economy as a whole and the Standard and Poor's stock index. The relationship was developed for a purpose other than forecasting and is not to be evaluated as a forecasting technique. It is included here only to indicate what its use as a forecasting relationship would suggest for the present and prospective levels of stock prices. Along with the other methods in the group, it suggests that the 1959 year-end level of the stock market is about 240 points too high.

IV. Norms Applied to Historical Data To Average Cyclical Values

This group of approaches is characterized by the application of norms developed on the basis of data and experience to historical averages. The purpose of the averaging is to eliminate cyclical influences.

The leading formulation in *Table* 4 is the Central Value Theory. The Central Value Theory seeks to calculate a plausible value of the group of stocks in the Dow Jones Industrial Average to provide a basis for judging whether the actual values of the DJIA are too high or too low on the basis of historical standards. The formula is:

The Central Value of the DJIA	equals	Average of the previous ten years' earnings	divided by	2 times the current Aaa bond rate

The Central Value Theory has a strong foundation in economic logic behind it. The numerator contains a

4. For an elaboration and illustration of these technical relationships, see J. F. Weston, "Some Theoretical Aspects of the Construction of Formula Timing Plans," Journal of Business, October, 1949.

Table 3

Direct Extrapolation of the Future Level of the DJIA by Use of Historical Data, 1954 Base

Name of Formula	Formula	1954	1959	1960	1965	1970
Arithmetic	DJIA = 400 + 10n	400	450	460	510	560
Geometric	DJIA = 400 $(1.03)^n$	400	463.7	477.6	553.7	641.9
Moving Average	3% stable growth rate	400	463.7	477.6	553.7	641.9
Warranted Value	2% growth rate	400	441.6	450.5	497.4	549.1
Actual DJIA		400	680			

Table 4

Norms Applied to Historical Data to Average Cyclical Values

Name of Formula	Formula	1954		1959	1960	1965	1970
Central Value Theory	10 yrs. Average Earnings / 2 (Aaa Corp. bond yield)	400	Note 1.	379	398	488	565
Dividend Central Value Theory	Current Dividends / 10 yr. Average Yield	400	Note 2.	464	505	701	896
Intrinsic Value Theory	12.5 (10 yr. Average Earnings) + .2 (Current Book Value)	400	Note 3.	458	470	572	665
Actual Year-End DJIA		400	Note 4.	466 680	484	645	859

Note 1: Based on 4% corporate bond yield; earnings growth of 4% per annum.
Note 2: Based on dividend growth of 4%; growth of DJIA of 6%.
Note 3: Book Value assumed to grow at 3%; earnings at 3%.
Note 4: Book Value assumed to grow at 5%; earnings at 6%.

measure of earnings which is the strongest single influence in determining the demand for common stocks. The denominator is a measure of the competing uses for funds and gets at the supply side of funds that will be in the market for the purchase of equity securities. Doubling the bond rate implies that common stocks should sell at double the yield basis of bonds. Application of the formula results in values of the DJIA substantially below recent levels.

A variant of the earnings formula is the Dividend Central Value Theory. While the Central Value Theory employs an average of past earnings and a current capitalization factor, the Dividend Central Value Theory employs current dividends and an average of past capitalization factors. The application of this formula results in values for the DJIA that are about one-fourth higher than the Central Value Theory, but about one-third lower than recent prices.

The Intrinsic Value approach applies a historical norm to an average of past earnings and adjusts this value by adding something for the accounting (historical) measure of the book value of a company's common stock. The method proceeds on the logic of capitalizing past earnings, but recognizes that book values may have some influence. Writers with some economic background are likely to deprecate the influence of book values and emphasize that "future earnings determine current prices and values."

But there is a profound reverse economic logic embodied in the use of the book value element in the Intrinsic Value formula. If earnings on book value have been below some norm (about 12 to 14% after taxes for U. S. industries), stockholders and managements may be expected "to do something about the situation" and earnings may potentially improve. If earnings on book value are much above historical norms, additional investment will be attracted into the industry and earnings are likely to decline. Thus the way the book value element is used in the Intrinsic Value formula, it is an indirect technique for bringing in implicit future earnings forecasts.

The application of the Intrinsic Value Theory results in valuations of the DJIA at about the same levels of the Dividend Central Value Theory.

The methods for valuing common stocks described in this section were developed in the period of the economic development of the United States when the problem of ironing out the business cycle was the paramount intellectual preoccupation. It was difficult to make optimistic assumptions about alternative attractive rates of growth when the problem of secular stagnation preempted the forums of writing and discussion. But if strong long-term growth is at all a realistic postulate, it is erroneous to average past data to calculate plausible current values. The Dividend Central Value Theory is in my judgment the best of the three formulas of this group in that it utilized current dividends and the item averaged, an interest or capitalization factor, is one which does not have a secular growth trend. However, in concept, the other formulas in this section could utilize current or future earnings without affecting the general form of the formula. Such shifts represent a modification of the theory of the price-making forces. We now turn to other types of applications.

V. Historical Norms Applied to Future Projections

Involved formulas abound for applying historical norms to future projections. When the complex formulae are analyzed, it is found that they in fact represent a relatively mechanical relationship between:

earnings—a multiplier—prices
or
dividends—a multiplier—prices

Present space does not permit a detailed translation of complicated valuation methods into their formal elements, but the basic relationships of these approaches are readily converted to simple underlying elements.[5]

5. For illustrations, see Benjamin Graham, The Intelligent Investor, (New York: Harper & Brothers, 1959) 2nd Ed., p. 49.

Table 5

Norms Based on Historical Relationships Applied to Projections of Earnings and Dividends for Future Years

Name of Formula	Formula		1954	1959	1960	1965	1970
Capitalizing future earnings	10 ×	3% growth	400	383	394	457	530
		5% "	400	398	418	533	680
	12	3% "	400	459	473	548	636
		5% "	400	477	501	640	816
	15	3% "	400	574	591	686	795
		5% "	400	608	645	865	1,154
	20	3% "	400	766	788	914	1,060
		5% "	400	811	859	1,153	1,539
Capitalizing future dividends	16	3% "	400	368	378	439	509
		5% "	400	382	401	512	653
	20	3% "	400	459	473	549	636
		5% "	400	477	501	640	816
	25	3% "	400	574	591	686	795
		5% "	400	597	627	800	1,021
Central Value Theory adjusted for growth	Next year's earnings / 2 Aaa rate		3%	438	451	523	606
			4%	451	469	571	694
			5%	464	487	622	794
Central Value Theory adjusted for growth and inflation	Next year's earnings / 2 Aaa − 2		Note 1	493	508	589	682
			Note 2	696	731	933	1,190
Correlation with GNP	DJIA = 28 + .97 GNPt + 1		Note 3	475	488	562	647
			Note 4	544	575	760	1,007
Growth Formula							
$8(G)^2(E)$	3% growth			510	513	560	649
	5% "		Note 5	661	693	923	1,292

Note 1: Based on Aaa = 5% and Earnings Growth Rate of 3%.
Note 2: Based on Aaa = 4% and Earnings Growth Rate of 5%.
Note 3: Based on 3% growth of GNP.
Note 4: Based on 6% growth of GNP.
Note 5: G is the ratio of future decade earnings to past decade earnings. Essentially, it applies a variable multiplier to earnings depending on the growth rate.

Admittedly some of the logic and diversity of forces are not portrayed; on the other hand, often the formulae contain several elements that are jointly correlated, so that only one factor need be used anyhow. Thus the most complicated formulae generally can be approximated roughly by a multiplier relationship representing alternative formulations of applying a multiplier to future earnings or dividends as shown in *Table* 5.

Table 5 sets forth the application of the Central Value Theory adjusted first for growth in earnings resulting from the growth in the economy and then adjusts for growth in earnings and asset values resulting from price level inflation. Finally, *Table* 5 sets forth my GNP formula based on a one year's earnings lead and a special type of growth formula which approximates the same results as the GNP formula.

The results of the application of the formulas in *Table* 5 exhibit a broad set of patterns in which the crucial variables are threefold. (1) The rate of future growth of earnings based on the growth of the economy in real terms, (2) the rate at which price inflation may take place in the country in the future, and (3) the level of interest rates at any particular time and whether the future of interest rates will have any secular long-term growth or secular long-term decline.

An examination of the results set forth in *Table* 5 indicates that the present levels of common stock prices lean heavily upon the assumption of a strong and uninterrupted rate of future growth in real earnings, substantial price inflation, but without secular growth in interest or capitalization factors. Recent levels of stock prices seem also to have discounted the influence of cyclical movements in common stock prices as well. The movement of stock prices between 1953-1959 represents first a catching up with past movements of GNP of the economy as a whole and then sharply rising above it.

While GNP has grown in a continued strong secular upward pattern, corporate profits after tax have failed to parallel the growth in GNP since 1950. Long-term bond yields are approaching the level which had been experienced in the pre-1930's era. Recent levels of the stock market are based on expectations which depart from patterns which have obtained historically. The basic question arises then as to whether such a departure from past patterns is justified.

VI. Increased Economic Stability—Increased Stock Price Instability

Note that there is an important distinction here. The argument is not whether there will be growth in GNP in the future, the argument is not whether there will be

Table 6

Growth Analysis of the DJIA, 1920-1959

Year	Year End Value DJIA	Amount of Change	Percent Change	Year	Year End Value DJIA	Amount of Change	Percent Change
1920	72.0	—		1945	192.9	40.6	26.7
1	81.1	9.1	12.6	6	177.2	(15.7)	(8.9)
2	98.7	17.6	21.7	7	181.2	4.0	2.3
3	95.5	(3.2)	(3.2)	8	177.3	(3.9)	(2.2)
4	120.5	25.0	26.2	9	200.1	22.8	12.9
1925	156.7	36.2	30.0	1950	235.4	35.3	17.6
6	157.2	0.5	0.3	1	269.2	33.8	14.4
7	202.4	45.2	28.9	2	291.9	22.7	8.4
8	300.0	97.6	48.2	3	280.9	(11.0)	(3.8)
9	248.5	(51.5)	(17.2)	4	404.4	123.5	44.0
1930	164.6	(83.9)	(33.8)	1955	488.4	84.0	20.8
1	77.9	(86.7)	(52.7)	6	499.5	11.1	2.3
2	59.9	(18.0)	(23.1)	7	435.7	(63.8)	(12.8)
3	99.9	40.0	66.8	8	583.6	147.9	33.9
4	104.0	4.1	4.1	9	680.0	96.4	16.5
1935	144.1	40.1	38.6				
6	179.9	35.8	24.8				
7	120.8	(59.1)	(32.9)				
8	154.8	34.0	28.1				
9	150.2	(4.6)	(3.0)				
1940	131.1	(19.1)	(12.7)				
1	111.0	(20.1)	(15.3)				
2	119.4	8.4	7.6				
3	135.9	16.5	13.8				
4	152.3	16.4	12.1				

Growth Rates (Compound Annual Rates)		Growth Rate
	(1920)-(1929) = 3.451	= 14.5%
	(1920-22)-(1928-29) = 3.269	= 17%
	(1920-22)-(1946) = 2.112	= 5%
	(1920-22)-(1951-53) = 3.444	= 4%
	(1920-22)-(1959) = 8.105	= 5.5%
	(1946)-(1959) = 3.837	= 11%
	(1920-22)-(1957-59) = 6.749	= 5%
	(1949)-(1959) = 3.398	= 13.5%

some price level inflation, the argument is not that interest rates will have no secular trend or no cyclical fluctuations, the argument revolves over the degree of magnitude of these movements.

Table 6 analyzes the past behavior of the Dow Jones Industrial Average in terms of the amount and percent of changes from year to year as well as compound annual rates of growth over selected time periods. Of all of the historical time segments analyzed, only the 1920's including 1929 and the 1950's including the latter years of the 1950's exhibit growth rates of over 10%. Growth rates in the Dow Jones Industrial Average of 4-6% would be plausible, but these are not the kinds of growth rates which have been exhibited in the stock market since 1953. Real questions arise as to the sustainability of growth rates of the order of magnitude of some 14% per annum.

There are many who urge that there is a basis for changing the fundamental approach for looking at the future for earnings dividends and stock prices on the following grounds.

1. There is a growth imperative in the economy which we have never had before.
2. The rise of pension funds with large investments in common stock.
3. The rise of mutual investment funds which brings the small investor into the market on a larger basis.
4. The general tendency of institutional investors to invest in common stock to a greater degree.
5. The Employment Act of 1946 which charges the government with increased responsibility for sustaining a high level of business activity.

These and numerous other factors might be cited in support of the view that the future holds new growth and stability in stock market prices. However, the validity of some of these arguments can be seriously questioned.[6] However, whether one agrees or not with the skepticism toward the permanence of some of the recent manifestations in stock market behavior or whether one holds that these are relatively characteristic behavior patterns for middle and advanced stages of a bull market, the following observations must be made. There is a curious paradox of inverse relationships involved here. It might be referred to as the rubber band theorem. If there were indeed a basis for the expectation that there will be greater stability in underlying economic growth patterns including earnings and dividends in the future and even if we agree with the general view that economic recessions in the future may be less violent on the average than they have been in the past, this promise and even assurance of greater general economic stability in the future may in itself be productive of greater instability in stock market prices in the future, and provide a basis for very healthy skepticism toward recent levels in the stock market.

6. Benjamin Graham, "Stock Market Warnings: Danger Ahead," California Management Review, Spring 1960, pp. 34-41.

For although earnings and dividends growth may continue at a 3 or 4 or 5% rate, there remains the question of how many years of future growth is appropriately reflected in current stock market prices. There is no intellectual foundation for setting an appropriate value.[7] As a consequence, the attainable increased stability in the rate of actual growth of earnings and dividends in the future *may produce greater instability in stock market prices* because the optimistic factors will tend to be over-valued during periods of optimism as they have in the past and tend to be discounted in periods of pessimism.

VII. Prospective Trends and Cycles in Stock Prices

Table 7 sets forth characteristic percent rates of change in leading economic variables over the characteristic postwar business cycles. It indicates the percentage decline during the characteristic recession year, the percentage of rise in the first upswing year, the second upswing year, and the third upswing year, and then the cycle is repeated. The average growth rate per annum for the cycle is also indicated in the table.

Applying these percentages beginning in 1957 starting with 1958 as a recession year, through 1970 provides the result set forth in *Table* 8, which sets out trend values of Gross National Product, cyclical values of Gross National Product, the percent change in the cyclical values of GNP, the trend value in the earnings of the Dow Jones Industrial Average, the cyclical value of the Dow Jones Industrial Average earnings, the percent changes in the cyclical value of the Dow Jones Industrial Average earnings and the Triple A bond rate. On the basis of these postulates about the future behavior of these critical variables, the consequences are set forth in *Table* 9. This table begins with the value of the Dow Jones Industrial Average based on the regression with Gross National Product which would also approximate the value detained by multiplying the trend value of expected future earnings on the Dow Jones Industrial Average by some fixed multiplier. Next it sets out a cyclical value of the DJIA based on a modification of the Central Value Theory in which a future growth in cyclical earnings is assumed and in which the cyclical bond rate is employed. Finally, a third element indicates what the level of stock prices would be if the economic values suggested by the first and second column are deviated from through speculative influences.

This third relationship in *Table* 9 indicates a value of 700 for the end of 1959, a value which was approximated by the actual behavior of the market in 1959. If characteristic cyclical patterns were followed, the market could potentially drop to a level of 340 by 1961 which would represent a 50% drop from present levels in the Dow Jones Industrial Average.

It would be nice to say that it is not likely that market would have the speculative rises or declines set out in

7. David Durand, "Growth Stocks and the St. Petersburg Paradox," Journal of Finance, (September, 1957).

Table 7

Patterns of Cyclical Change in the U. S. Economy

	FRB Index	GNP	Profits	DJIA Earnings	DJIA Dividends	DJIA
Recession year	— 6%	0	— 20%	— 20%	— 4%	— 25%
First up-swing year	10%	10%	30%	30%	8%	30%
Second up-swing year	5%	5%	8%	8%	5%	10%
Third up-swing year	2%	3%	0	0	4%	5%
Average Growth Rate per annum	3%	4.5%	4.5%	4.5%	3.25%	5%

Table 8

Trends and Cycles in Factors Determining Security Prices

Year	Trend Value GNP ($bil.)	Cyclical Value GNP ($bil.)	Percent Change in Cyclical Value—GNP	Trend Value DJIA—Earnings	Cyclical Value DJIA—Earnings	Percent Change in Cyclical Value—Earnings	Aaa Rate
1957	442	442	—	35	—	—	3.8
1958R	464	442	0.0	37	28	—	4.1
1959	490	480	0.9	40	36	29	4.6
1960	517	516	0.8	42	42	17	5.0
1961	545	535	0.4	45	44	5	5.0
1962R	575	535	0.0	47.6	34	(23)	4.0
1963	607	590	1.0	50.6	44	29	4.6
1964	641	635	0.8	53.7	54	23	5.0
1965	676	670	0.6	57	57	6	5.0
1966R	713	675	0.1	60.4	45	(21)	4.0
1967	752	735	0.9	64.1	59	31	4.6
1968	794	780	0.6	67.8	67	14	5.0
1969	837	835	0.7	72	72	8	5.0
1970R	883	840	0.1	76.2	50	(31)	4.0
Growth Rate	5.5%			6%			

Table 9

Trends and Cycles in Security Prices

Year	DJIA Based on GNP*	Cyclical Value DJIA**	Percent Change	Speculative Value of DJIA***	Percent above and (below) DJIA Based on GNP
1957	478	500		600	20
1958R	503	581	16	697	28
1959	529	583	0	700	24
1960	557	550	(6)	440	(27)
1961	586	425	(23)	340	(72)
1962R	617	733	72	880	30
1963	650	750	2	900	28
1964	684	713	(5)	856	20
1965	720	563	(21)	450	(60)
1966R	757	983	75	1,180	36
1967	798	931	(5)	1,117	29
1968	840	900	(3)	1,080	22
1969	885	625	(31)	500	77
1970R	—	—	—		

*DJIA = 28 + .97 GNPt+1

**$\frac{\text{Cyclical DJIA Earnings at } t+1}{2\,Aaa - 2}$

***Based on 20% overshoot over values based on economic factors in both bull and bear markets.

Table 9. It is likewise tempting to conclude as others have done that having had the excess on the upside it is very likely or that history suggests that we will have the speculative deficiencies on the downside.

My position, however, is neither of these. My position is that because of the expectation of increased stability in underlying economic factors the very continued realization of that increased stability and growth are likely to lead to speculative excesses. Increased economic stability and growth set a higher floor to which the Dow Jones Industrial Average is likely to decline on economic grounds in the future. However, if we specify some floor in advance, the higher the excess (even if the floor is not lowered through pessimistic excesses) the percentage decline in the market is thereby likely to be greater.

VIII. Conclusions[8]

A review of the patterns set out in this study makes it possible to set forth two unequivocal conclusions. One of these is that the present levels of the stock market are not excessive if the kinds of expectations which are now held do not change. However, these expectations have been carried to the point where they over-discount the expected future growth and stability. As a consequence on the basis of a reasonable expectation of how firmly investors expectations will be held, I would judge the level of the stock market to be about 100 points too high even from its cyclical norm as of the end of 1959.

8. This paper was originally written and circulated among associates on December 18, 1959. Although the material in this section was certain to be historical by the date of publication, it appeared preferable not to alter it, so that the theory behind the conclusions could be tested by events prior to publication date.

My second unequivocal conclusion is that having experienced the kinds of rises that the market has experienced in the past, there is no justification for anything more than an average rate of growth in the Dow Jones Industrial Average of about 5% per annum in the future. The rise of about 35% in 1958 may be justified in terms of discounting the expected increase in earnings in 1959 as we were coming out of the 1957-1958 recession. However, for the subsequent cyclical years, a percent rise in the Dow Jones Industrial Average beyond 5 or 10% would be clearly unjustifiable on economic grounds.

The strong bull market since 1949 may be justifiable through the rise experienced through the end of 1958. The magnitude of the rise experienced in 1959, in my judgment, takes on characteristics of a speculative excess. Furthermore, whatever rises were due to failure of common stock prices to catch up with the growth of the economy through 1956 at the time of the writing of my previous article (and which may have been true even through the end of 1958) have now caught up.

In the future an average rise in the Dow Jones Industrial Average beyond 5-8% per annum would be clearly in the category of excesses. Note this refers to an average rate of increase in the Dow Jones Industrial Average over the cycle. This would imply a characteristic 30% rise coming out of a recession, a 10% rise in the subsequent year, and then a sidewise movement in the market for about a year preceding about a 20-25% drop in the market in any recession year of the magnitude in which the Federal Reserve index drop is about 6% and Gross National Product simply levels out.

WHAT MODERN CAPITALISM needs is a profession of analytical directors—directors who will review the actions of management both for their benefit and that of the stockholders—and who, in order to do this, will be selected from a trained and experienced group of Security Analysts and elected independently of the directing directors.

—*Walter K. Gutman*

* * *

ONE NOTABLE ECONOMIC FREEDOM remains, even today: a man's freedom to do as he likes with his own money. He can spend it on pleasure trips . . . give it away . . . even risk it in a search for minerals on the moon. All these he can do if it's his money. But corporate stewards, handling other folks' money, are not entitled to such free-wheeling individualism. Corporate-wide plans and activities are directed toward one goal: the studied, productive employment of investors' funds. Today, this means diversification; new processes and new products. We have always been more interested in making our funds produce than we have in confining ourselves to one narrow area of activity. Because of this flexibility, we believe that our faith in the long range profitability of the oil industry is fully justified.

—*Sunray Mid-Continent Oil Co.*

PRESIDENT'S REPORT

FROM NORTHERN STATES POWER COMPANY

Owned by 77,900 shareholders, and serving over 600 communities in Minnesota, No. Dakota, So. Dakota, and Wisconsin

The business climate's healthier in the NSP area because industry is diversified

75 out of 78 kinds of industries located in NSP's 4 states

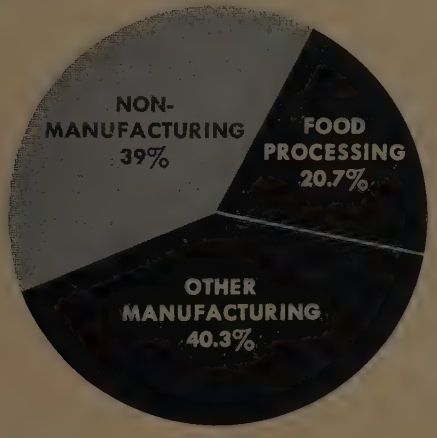
Diversification of industry is a big factor in the healthy growth with stability in Wisconsin, Minnesota, North Dakota and South Dakota.

Only three kinds of industries of the 78 listed in the Standard Industrial Classification Manual are not represented.

These three are anthracite and bituminous coal mining and tobacco manufacture.

But, almost everything else that is manufactured or distributed comes from the area served by Northern States Power Company.

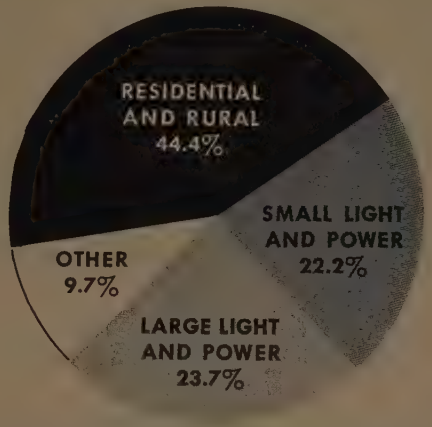
This broad diversification helps spread our kilowatt-hour revenue...helps make our economy more stable.



Percent of NSP Industrial Electric Revenues, 1959

Note in the graph above that 61% of NSP 1959 industrial electric revenue comes from manufacturing. Almost a third of this revenue was from food processing industries which also help stabilize our economy.

Not only is industry diversified, but in 1959, 44.4% of our electric revenue came from residential and rural customers. This is desirable business.



Percent of NSP Total Electric Revenues, 1959

This high ratio of individual customers to company customers helps give us a "built-in stability."

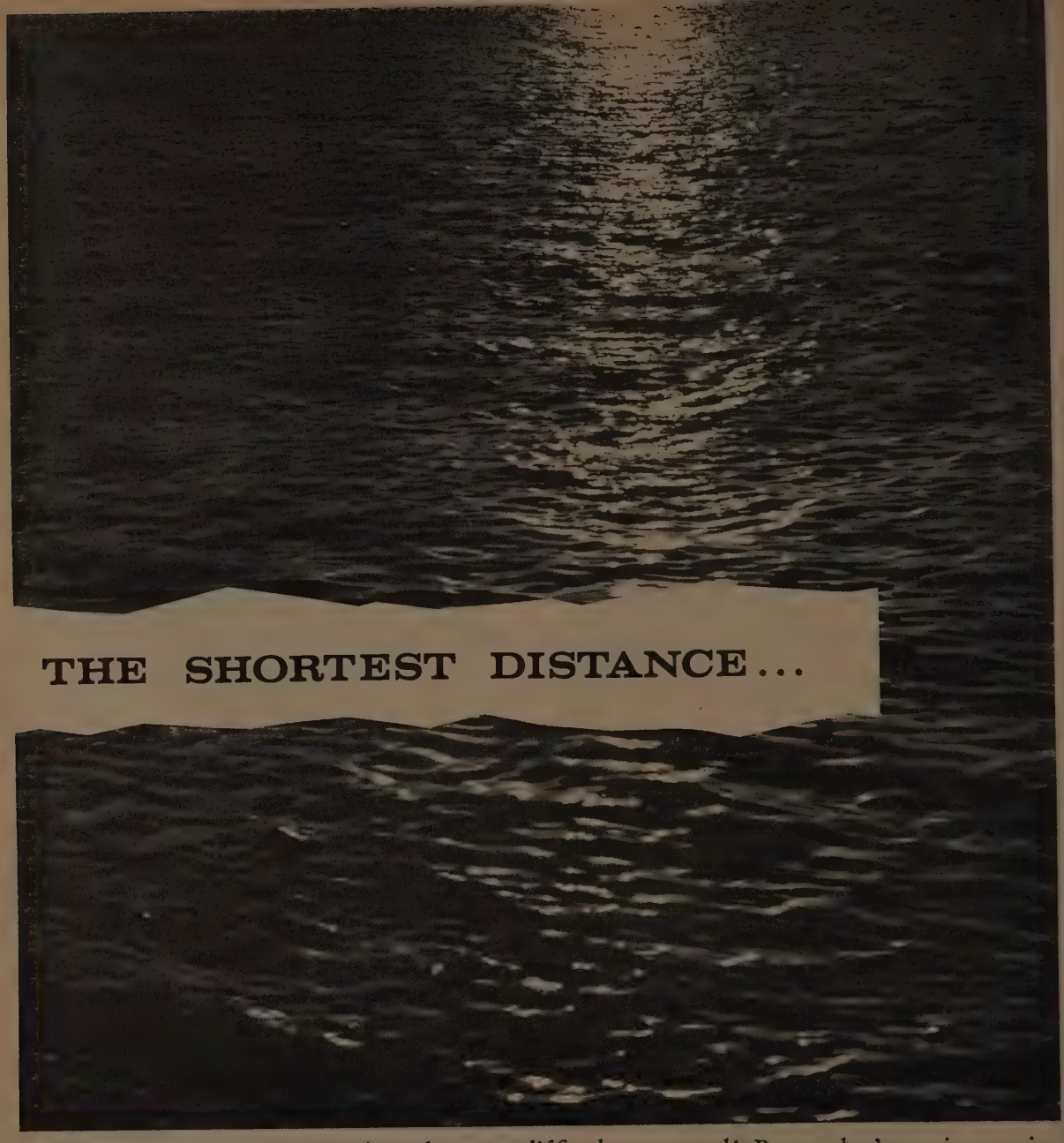
Our labor force is highly intelligent, which serves to attract electronic firms--one of the faster growing industries today.

In Minnesota alone, there are now more than 100 electronic firms with annual sales of more than $500 million.

Other new industries have also become important in recent years. These include oil refineries, chemical plants and insurance companies. In the Minneapolis-St. Paul area alone there are 43 insurance companies with annual premiums exceeding $420 million.

Industry, as a whole, is becoming more and more aware of the advantages of this area, and from indications, the steady growth of industry into this area will continue.

President,
Northern States Power Company
Minneapolis 2, Minnesota



THE SHORTEST DISTANCE...

. . . between two points *was* often the most difficult to travel! But today's engineers, ingeniously using the basic construction materials, have changed this.

By 1965, the Chesapeake Bay will be spanned from Norfolk to Virginia's Eastern Shore. A mighty bridge-tunnel system, nearly 24 miles long, linking America's Seaboard states will be constructed of *concrete.*

Southern Materials pays tribute to the genius of the men who conceived, and those who will execute the epochal Chesapeake Bay Bridge-Tunnel . . . The Shortest Distance!

SM

Southern Materials

COMPANY INCORPORATED

NORFOLK, VA. RICHMOND, VA. JACKSONVILLE, FLA.

PRODUCERS OF SAND, STONE, GRAVEL CONCRETE, CONCRETE PRODUCTS

THREE MONTHS ENDED AUGUST 31	
NET SALES	$ 6,098,000
NET INCOME	$ 539,000
NET INCOME PER SHARE	$ .65

The Gold Flow

by B. Barret Griffith

(*See editorial, page* 3)

FOREIGN CLAIMS ON OUR MONETARY GOLD now exceed our total gold reserves. As you know, our gold reserves have been declining since 1949, and beginning in 1953 the total of U. S. required reserves, plus foreign claims, have exceeded our gold reserves. (See the accompanying table).

In July, foreign short-term dollar balances of $20.3 billion, plus foreign holdings of U. S. Government bonds and notes of about $2.4 billion, plus U. S. required gold reserves of $11.9 billion, together substantially exceeded our monetary gold stocks. Claims are not currently reported, but Gold Stock is published each Friday in banking figures. Because the flow of gold reflects the direction of the tide in men's affairs, the present status of our reserves, relative to claims on them, would seem to increase the importance of carefully studying this bellwether index of trends.

Although written guesses and published studies of things economic oftentimes rise up to plague the writers of them, there is sometimes much to be learned from reviewing past guesses. An article entitled "Gold" published in *The Analysts Journal* of August, 1957, prophesized that before the 1960 election an attractive U. S. Government bond would be offered to tempt foreigners from taking our gold, a free market for gold might be seen, and the Treasury would effectively raise the price of gold by being reluctant to sell all of this asset at the $35 price.

The Treasury has issued the "magic" 5's of 1964. The other two projections have yet to be confirmed. An article entitled "Deflation—What Is It?," published in *The Analysts Journal* of November, 1958, noted from studying stock prices, commodity prices and the ratio of gold to currency since 1860, that stable earnings common stocks (which did not depend primarily on increasing prices for profits) acted best during deflation, and that the trough in commodity prices sometimes occurred about 15 years after the great post-war peaks in them. As was noted in an article last November, the downtrend in commodity prices since 1951 has passed the half-way mark toward the trough which is marked for them historically. The outflow of gold seems to have been a factor in increasing interest rates, contracting commodity prices, and dampening common stock prices. What are the current implications from the flow of gold and the present status of our gold reserves?

With the potential claims of foreigners now exceeding our monetary gold stocks, it is reasonable to conclude that our dollar is on the defensive and future confidence in it becomes increasingly important. Federal financial orthodoxy — at least in the eyes of foreigners—will be increasingly important, it seems. The outflow of gold since 1949, and the rapid jump in foreign claims on our remaining gold reserves since 1951, to the point where foreign claims alone exceed our gold stocks, raises a question of the proposed elimination of U. S. required gold reserves as one means of solving our gold problem.

On the other hand, the famous Keynes Plan for an international clearing union (giving all title to national gold reserves to an international agency and agreeing that no member would be entitled to any demand for it) is a doubtful solution to our gold problem because so many of Keynes' other theories of taxing, spending, and deficit financing now seem to be increasingly suspect. The whole theory of Government ability in the management of money, trade, production and consumption seems to be undergoing test. Concurrent economic trends toward the correction of excesses may be stepping up the strength and pace of this test.

The gold flow pictured in the accompanying table, and the present status of our gold reserves, relative to claims on them discussed above, probably makes the notation of facts as they are more important than any projections that could presently be made. Increasing interest rates to new highs for many years; the decline in commodity prices since 1951; the decline in prices of many groups of common stock since July, 1959; and the recently noticeable squeeze on corporate profit margins together suggest a rise in the selling

All gold belonging to the United States is held by the Treasury Department, but gold may be held by the Federal Reserve Bank and earmarked for account of foreign central banks, governments and the International Monetary Fund. Such earmarked gold is *not* part of the monetary gold stock of the United States. If gold is imported and placed under earmark for foreign account, there is at that time no transfer of ownership, and hence, by definition, no gold inflow. On the other hand, if gold under earmark here for foreign account is sold to the United States Treasury, there is a gold inflow in the sense of transfer of ownership without a simultaneous gold import. The compartment illustrated here contains approximately 500 million dollars worth of gold, only about one half of which is shown. The value of each gold bar is about $14,000 and weighs 28 lbs. The entire gold vault contains approximately ten billion dollars in earmarked gold.

B. Barret Griffith is associated with John H. Lewis & Co., as resident partner at Colorado Springs. He is also author of the book "Investing is Adventure."

U. S. Gold Reserve vs. Requirements and Potential Claims

1922-1959 (In millions of dollars)

End of Year	U. S. Gold Reserve	A U. S. Required Gold Reserves	B Foreign Short-Term Dollar Balances	Total of A and B	% Claims To Gold
1922	$ 3,506	$ 1,686	$ 1,009	$ 2,695	76.9
1923	3,834	1,652	990	2,649	69.0
1924	4,090	1,599	1,237	2,836	69.3
1925	3,985	1,558	1,193	2,751	69.0
1926	4,083	1,564	1,639	3,203	78.4
1927	3,977	1,624	2,591	4,215	106.0
1928	3,746	1,621	2,673	4,102	109.5
1929	3,900	1,611	2,673	4,284	109.8
1930	4,225	1,562	2,336	3,897	92.2
1931	4,052	1,781	1,304	3,085	76.1
1932	4,405	1,967	746	2,713	61.6
1933	4,012	2,166	392	2,558	63.8
1934	8,259	2,729	670	3,399	41.2
1935	10,124	3,610	1,301	4,911	48.5
1936	11,422	4,101	1,623	5,724	50.1
1937	12,790	4,170	1,893	6,063	47.4
1938	14,591	5,099	2,158	7,257	49.7
1939	17,800	6,354	3,221	9,575	53.8
1940	22,042	7,897	3,938	11,835	53.7
1941	22,761	8,310	3,679	11,989	52.7
1942	22,739	9,977	4,205	14,202	62.5
1943	21,981	11,902	5,375	17,277	78.6
1944	20,631	14,350	5,820	21,170	102.6
1945	21,083	10,868	7,074	17,942	85.1
1946	21,706	10,731	6,481	18,429	84.9
1947	22,868	11,294	7,135	17,212	75.3
1948	24,399	11,894	7,756	19,650	80.5
1949	24,563	10,753	7,623	18,376	74.8
1950	22,820	11,055	9,222	20,227	88.6
1951	22,873	11,720	9,302	21,022	91.9
1952	23,252	12,055	10,731	22,786	98.0
1953	22,090	12,151	11,771	23,922	108.3
1954	21,793	11,812	12,923	24,735	113.5
1955	21,752	11,975	13,580	25,555	117.5
1956	22,058	12,120	16,428	28,548	129.4
1957	22,857	12,101	16,580	28,681	125.5
1958	20,582	12,036	17,637	29,673	144.2
1959	19,507	12,182	21,472	33,654	173.0

price of our gold and a return to Federal financing orthodoxy, simply because we may not be able to afford to do anything else.

Everyone hopes for the success of recent moves by the money managers, who have apparently intended to spur our economy by lowering the price of money and increasing its supply at the cost of only temporary depreciation in the dollar. If these hopes are to be granted, it must be shortly evident by an end to the gold outflow and improvement in the ratio of our gold reserves to total claims on them.

European Common Market Establishes School

Indicative of long-range business and economic plans by the six countries which comprise the European Common Market is the fact that a program has been established to meet new management requirements of companies operating in that area.

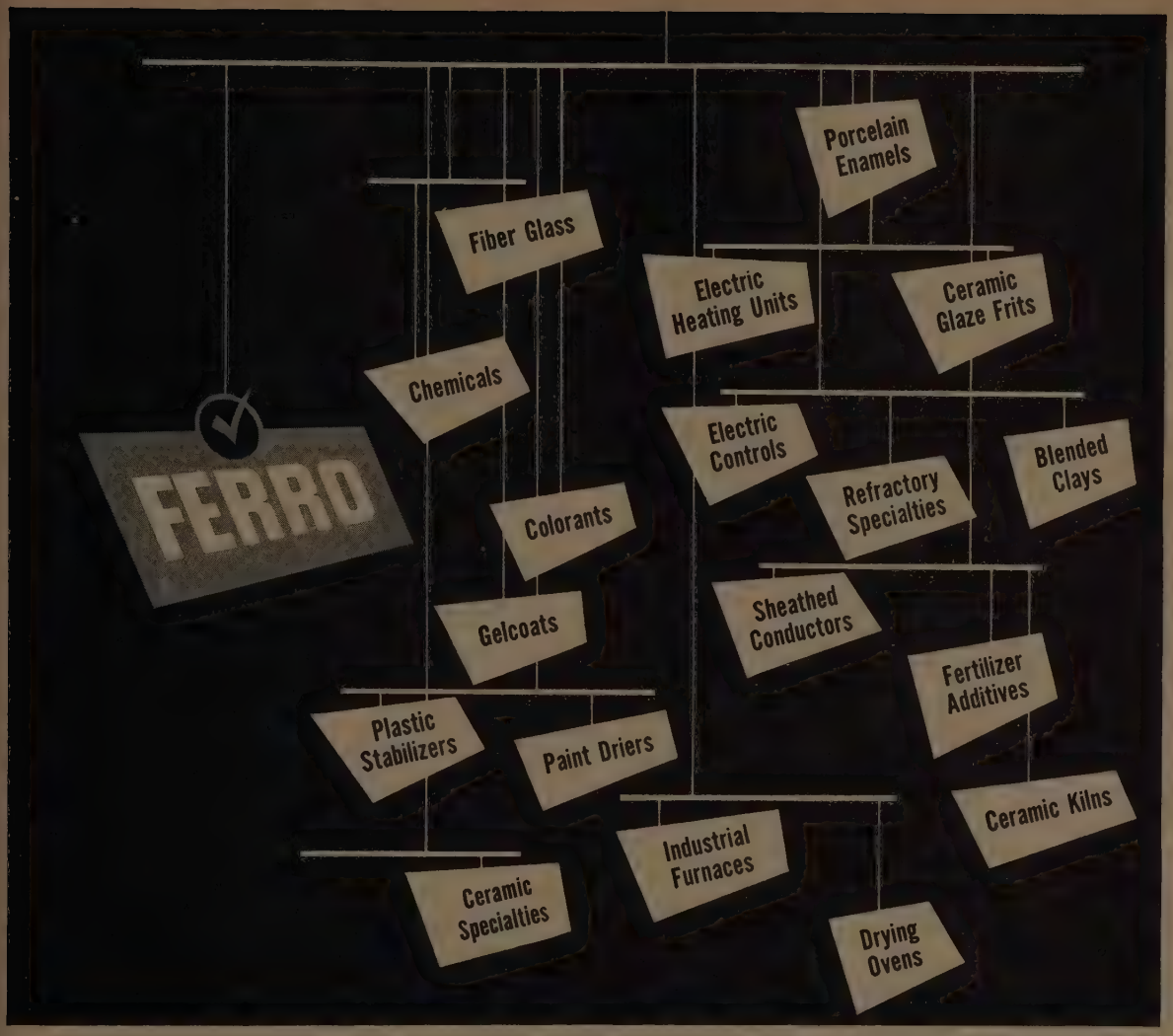
Known as "Eurogestion," it represents joint efforts of five advanced management institutes in France, West Germany, Italy, and Belgium. Together, with The Netherlands and Luxembourg, these countries comprise the Common Market, through which national economies are to be merged by the catalyst of free trade within the union of the six nations.

(Note: See article in April-May issue of *The Financial Analysts Journal* on "Europe's Outer Seven" —which includes a discussion of the Common Market as well).

The "Eurogestion" program reportedly is designed to give participants a broad "Europeanized" view of management through methods inspired by American techniques. But it was only after a detailed study of a program suited to Common Market developments, and a series of pilot courses, that collaborating institutes undertook the first full course in 1959.

This was an extended series of one and three-week sessions at each of the five institutes. Some 100 European business executives participated. Instruction by professors and business leaders of various countries, and by Common Market officials, ranged over a wide area of different national business practices and customs.

Field trip study of industries and business centers in the various countries also was undertaken. Special attention was directed to differing distribution methods, sales, financial and personnel practices, as well as production, tax and legal procedures. With addition of a full exchange of ideas and informal discussions by participants, the overall aim of the activity was the development of a common point of view—most appropriate in a Common Market.



NINE-MONTHS COMPARATIVE CONSOLIDATED SALES AND NET INCOME

	Nine-Months Ended September 30	
	1960	1959
Consolidated Sales	$47,243,000	$47,424,000
Consolidated Income Before Taxes	$4,442,000	$5,270,000
Consolidated Income Taxes	2,278,000	2,672,000
Consolidated Net Income	$2,164,000	$2,598,000
Earnings Per Share on 816,057 Shares (Outstanding September 30, 1960)	$2.65	$3.18

FERRO

FERRO CORPORATION

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DURING
1960

NORTHERN
NATURAL GAS COMPANY

LAID
896 MILES OF NEW PIPE

■ From the gas fields of the Southwest to the woods of northern Minnesota, Northern Natural Gas Company has been busy laying pipe . . . 896 miles of it.

■ Part of this new pipeline will bring natural gas to 58 Iowa, Minnesota and Wisconsin communities for the first time. To speed service to these new customers, Northern used helicopters to move the huge weights that keep the pipe in place during construction.

■ More pipe is increasing supplies of gas to present customers. Pipeline capacity is being increased by 127 million cubic feet daily to a total of more than a billion and a half.

■ Additional pipe also is used to gather more natural gas from wells and processing plants, as Northern continues to expand its sources and reserves.

NORTHERN
NATURAL GAS COMPANY
GENERAL OFFICES: OMAHA, NEBRASKA
piping prosperity to the northern plains

What a Security Analyst Wants to Know

by R. B. Johnson

BEFORE ATTEMPTING TO DISCUSS just what a Security Analyst wants to know, let's make sure we understand what the Security Analyst is attempting to do and, in fact, why he wants to meet members of management and why he wants to see some specific plant in operation.

In most simple terms: a Security Analyst attempts to distinguish between the thousands of companies whose securities are offered for sale in the market and, to determine which may represent true value—or real investment opportunity. And this, I realize, connotes almost as great a risk as a strapless evening gown on Kathryn Hepburn.

So . . . when a Security Analyst visits management, he wants to obtain information but, perhaps even more important, he will formulate *opinions* based upon *impressions* . . . impressions received beginning with the moment that he first planned his trip.

Yes, that is true. If an Analyst discovers in plotting an itinerary around the country to call on various companies that one company, for example, may be relatively inaccessible insofar as transportation is concerned—this makes an impression. And please don't misunderstand me, the impression made in no way results from any minor inconvenience experienced by the Analyst in getting to the plant. This would be like the late Errol Flynn resenting the inconvenience of Beverley Aadland's age. Rather, the inference which he may draw is with respect to the possibility of transportation difficulties which might be encountered in getting raw materials to a plant and finished products from that plant.

Before I forget it let me suggest one other point right here: Even before planning his trip an Analyst will receive a preliminary impression of a company when he telephones to arrange an appointment. This is a trivial point, it's true; but it's just one of a series of smaller points upon which an Analyst bases his inferences as to the relative attractiveness of a company. The impression I am talking about is, of course, that made by a *telephone operator*. There can be all the difference in the world in the voices of two different people on a telephone switchboard. And keep in mind this is the *first* contact which the Analyst may have with a specific company and his first impression *may* be formed upon the basis of the voice, and the manner of the telephone operator.

R. B. Johnson, assistant manager, research department, of Schwabacher & Company, San Francisco, is a graduate of Columbia University with a master's degree in economics, Columbia's Graduate School of Business Administration. An Air Force flying commander in World War II, he has also been an instructor in economics at Columbia. Mr. Johnson formerly served in an executive capacity with the Chase Manhattan Bank.

Now . . . let's get into the subject of what a Security Analyst wants to know. In attempting to determine the possible relative value of a company's securities, an Analyst might prepare an initial study of a company. Such a study might be based upon a review of the annual reports which have been published for several years in the past, together with an examination of the information and material to be found in typical investment statistical manuals or services.

This part of analysis (for want of a better term) might be called *quantitative*. But a word of caution with respect to quantitative analysis . . . such a term is relative—it's subjective—depending upon one's point of view. For example some people feel Brigette Bardot wears dresses that are cut too low . . . others feel that Miss Bardot is merely "built too high." Thus, quantitative considerations, as you can see, depend upon one's viewpoint.

As an illustration of one of the steps involved in a quantitative analysis, our Research Department has prepared a *"spread sheet"* on companies in the petroleum industry. We have reproduced this spread sheet here.

This is a typical, basic study of the kind prepared by, and used by, many Analysts. It is helpful in attempting to compare, statistically, several companies within a given industry. Please do not attach any particular significance to the fact that this one deals with the petroleum industry. Similar spread sheets are prepared on the steel industry, the chemical industry, the drug industry, etc.

Also, it will be noted that at the top of the vertical columns, instead of company names, you will find numbers: 1, 2, 3, etc. While I am not in any way attempting to disguise the identity of these companies, at the same time I didn't wish to appear to be "holding forth" for any individual company. This should be construed, after all, as only an illustration of one type of method employed by many Analysts; we should view it then as educational—not promotional.

Nevertheless by means of such a spread sheet an Analyst is able to examine—before he ever asks for an appointment to visit a company and see a specific plant —the history or record of operations of a company as they compare with many competitors in the same industry.

Now, to refer to this spread sheet for a moment let's review it—briefly and quickly.

We have compared, statistically, eleven companies. It may be noted that they are divided initially as to *international, crude producers* and *integrated* companies. Thus, in comparing one company with another let's restrict such comparisons to companies within the same category; i.e., international with international—

crude producer with crude producer—and integrated with integrated. And—before I get too far along—let me suggest also that when examining a spread sheet of this type one should always read the columns horizontally—rather than vertically.

At the top left you will notice the criterion *"Sales."* This, of course, is one of the first things that ". . . an Analyst wants to know." In addition to the most recent year's figures you will note that sales results for the preceding five years are also shown.

Please note the line entitled *Per cent change* which can be quite significant. For example, looking at the four international companies we see that Company One, over the period from 1955 through 1959, has succeeded in increasing sales 25.5%. Company Two has increased sales 26.2%. Company Three, 51.5%, and Company Four, 22.5%. Thus, it might appear that in *this* criterion, Company Three has enjoyed the greatest percentage increase in sales over the past five years of any of the internationals compared.

Our next criterion is *Pre-Tax Income*. Speaking of taxes, that old adage that you can't take it with you doesn't bother us any more—now we only wonder how to keep it while we are here. But, in our schedule of pre-tax income, again we have used not only the most recent year's figures but also figures for the past five years, and, again, the line per cent change from 1955 through 1959. These figures indicate, for Companies One through Four: plus 16.9%, minus 9.8% plus 25.1% and minus 3.2%. Thus, we see that Company Three would appear to have succeeded in recording a greater percentage increase in pre-tax income than any of the other three companies with which it is compared.

Our next criterion is *Pre-Tax Profit Margin*. Here we do not see as wide a variation between the four companies. In this consideration, however, Company Four appears to have the best pre-tax margin for last year—to wit: 18%.

The next criterion is *Net Income*—again using the past five year figures together with a per cent change for that period. Here we see Company One recorded a 9.7% increase during the past five years. Company Two suffered an 11.2% decline. . . . Company Three a 34.9% gain and Company Four a 9.7% gain. Thus, again, we see that Company Three appears to have registered the largest gain over the past five years.

On the basis of our next criterion *Earnings Per Share,* Company Three appears to have relatively out-distanced its competitors. Following the line *Per cent change* from 1955 to 1959 for the four companies we see: a 10.5% decline, an 18.8% decline, a 26.9% *increase* and a 9.6% increase.

Our next criterion is *Price/Earnings Ratio* and figures are given for the last five years. The prices used in computing this ratio are the prices at the end of the year. For the most recent year—1959—we see ratios of 11, 16.9, 14.6, and 12.5.

Under the next heading *"Price—Year End"* we compare the percentage change in market price from 1955 through 1959. Here we see Company One with a 31% increase, Company Two a 2% decline, Company Three a 41% increase, and Company Four a 10.4% increase. Thus, one might infer that Company Three, at least over the past five years, has shown a greater percentage increase in market price per share at year-end than the three other companies with which it is compared.

The next comparison reveals the *price range* over the past five years. Next, we see the *dividends* per share paid over the past five years. In addition we see the per cent change in the dividends paid during this same period. Our next criterion indicates the *Per Cent Yield* obtainable on the shares for each company during the past five years.

The final two criteria on this spread sheet are among the most important and most significant: *Cash Flow* (per share) and *Price/Cash Flow*. For many years earnings, per share have been considered by many to be of great significance in attempting to compare one company with another, or in fact to compare one company's current results with its past operating record.

Petroleum analysts especially, however, have long recognized the greater significance of the *cash flow* criterion. While cash flow is an important measurement in many different industries it is of *particular* significance in comparing companies within the petroleum industry. Cash flow—as you know—includes not only net earnings but also depreciation charges and depletion allowances as well as amounts charged to amortization.

Now, comparing our cash flow figures for the year 1959 we see that Company One realized $8.24 per share, Company Two $5.35, Company Three $10.48, and Company Four $6.24.

In our final criterion, *Price/Cash Flow*—again looking at the year 1959—we see that shares of Company One were available at a ratio of 5.4, Company Two 9.3, Company Three 8.2, and Company Four 8.1.

There, briefly and quickly I have attempted to hit only the high points covered on this spread sheet. Space does not permit a comprehensive examination of all the information, but I hope that this quick rundown will indicate an idea as to some of the things that ". . . Analysts want to know." These then are what we might call quantitative points of analysis.

Let's now turn for a moment and examine what I choose to call *qualitative* considerations. And at this point, I should like to suggest that, in my personal opinion, qualitative considerations are, at once, the most difficult to analyze and the most significant.

Importance of Management

To me the most important—and the most significant—of qualitative considerations is *Management*. I personally feel that an analysis of a company's management, more than any other single consideration, holds the key to whether the securities of that company may represent a real investment opportunity or not. Management, in my opinion, is the clue to the probable success or failure of a given enterprise. Admittedly, in attempting to analyze management, we are dealing with *sub*jective considerations rather than *ob*jective — such

	INTERNATIONAL				CRUDE PRODUCERS			INTEGRATED			
	①	②	③	④	⑤	⑥	⑦⑭	⑧	⑨	⑩	⑪
SALES (in millions)											
Per cent change 1955-59	+25.5%	+26.2%	+51.5%	+22.5%	+0.6%	+55.4%	+65.0%	+15.3%	+11.0%	+5.6%	+9.9%
1959	$4,332.6	$7,910.7	$2,678.0	$1,564.8	$ 102.4	$ 38.7	$ 130.2	$ 423.8	$1,232.2	$ 387.4	$1,956.8
1958	4,278.4	7,543.6	2,327.9	1,559.2	102.8	32.9	109.8	408.0	1,190.4	388.1	1,864.0
1957	4,403.8	7,830.2	2,344.2	1,650.8	116.4	35.4	108.3	432.7	1,251.1	419.0	2,010.1
1956	3,882.4	7,126.9	2,046.3	1,452.5	107.9	26.8	88.0	396.4	1,180.1	392.5	1,890.2
1955	3,451.0	6,272.4	1,767.3	1,277.8	101.8	24.9	78.9	367.5	1,110.1	367.0	1,781.3
PRE-TAX INCOME (in millions)											
Per cent change 1955-59	+16.9%	-9.8%	+25.1%	-3.2%		+44.8%	+494.1%	-5.6%	-51.7%	-11.1%	-16.2%
1959	$ 542.9	$1,085.8	$ 414.1	$ 281.0	N/A	$ 29.4	$ 20.2	$ 30.6	$ 55.7	$ 34.4	$ 161.3
1958	471.1	1,009.6	351.5	297.4	$ 23.3	25.7	16.7	25.3	67.5	31.5	128.6
1957	599.3	1,283.4	416.2	328.3	35.2	29.4	18.9	40.0	107.4	31.8	185.0
1956	514.6	1,313.5	380.9	334.2	29.5	21.8	5.0	36.3	134.1	43.3	186.6
1955	464.5	1,190.0	331.0	290.2	28.1	20.3	3.4	32.4	115.4	38.7	192.4
PRE-TAX PROFIT MARGIN											
1959	12.5%	13.7%	15.5%	18.0%	N/A	⑫	15.5%	7.2%	4.5%	8.9%	8.2%
1958	11.0%	13.4%	15.1%	19.1%	22.7%	⑬	15.2%	6.2%	5.7%	8.1%	6.9%
1957	13.6%	16.4%	17.8%	19.9%	30.2%	⑭	17.5%	9.2%	8.6%	7.6%	9.2%
1956	13.3%	18.4%	18.6%	23.0%	27.3%	⑮	5.7%	9.2%	11.4%	11.0%	9.9%
1955	13.5%	19.0%	18.7%	22.7%	27.6%	⑯	4.3%	8.8%	10.4%	10.5%	10.8%
NET INCOME (in millions)											
Per cent change 1955-59	+9.7%	-11.2%	+34.9%	+9.7%	-5.5%	+44.8%	+470.5%	-9.8%	-43.7%	+9.1%	-5.6%
1959	$294.9	$ 629.8	$ 354.4	$ 253.6	$ 24.0	$ 19.4	$ 19.4	$ 27.5	$ 45.5	$ 25.1	$ 139.6
1958	253.2	562.5	310.2	257.8	22.5	17.4	16.6	25.0	49.5	24.0	120.3⑰
1957	357.4	805.2	332.3	288.2	29.9	19.3	18.9	38.2	79.3	23.9	157.4⑱
1956	301.6	808.5	302.3	267.9	26.5	14.6	5.0	34.2	91.1	26.6	149.4
1955	268.8	709.3	262.7	231.1	25.4	13.4	3.4	30.5	80.7	23.0	147.9⑲
EARNINGS (Per Share)⑳											
Per cent change 1955-59	-10.5%	-18.8%	+26.9%	+9.6%	-5.2%	+44.0%	+470.1%	-9.8%	-50.7%	+8.9%	-13.9%
1959	$ 4.07	$ 2.93	$ 5.85	$ 4.01	$ 3.81	$ 2.16	$ 45.84	$ 3.22	$ 2.96	$ 5.02	$ 3.90
1958	3.91	2.72	5.14	4.08	3.56	1.94	39.20	2.93	3.23	4.82	3.36㉑
1957	6.08	4.08	5.82	4.56	4.74	2.16	44.71	4.49	5.18	4.79	4.44㉒
1956	5.14	4.11	5.30	4.24	4.20	1.64	11.94	4.03	6.17	5.35	4.33
1955	4.55	3.61	4.61	3.66	4.02	1.50	8.04	3.57	6.01	4.61	4.53㉓
PRICE EARNINGS RATIO											
1959	11.0×	16.9×	14.6×	12.5×	19.9×	23.7×	28.8×	13.3×	18.4×	11.1×	11.3×
1958	12.2×	21.2×	16.7×	14.6×	29.0×	28.9×	44.8×	15.2×	20.3×	12.4×	14.1×
1957	6.4×	12.2×	10.7×	10.1×	19.0×	18.9×	37.4×	8.6×	9.0×	8.9×	8.1×
1956	8.6×	14.3×	11.3×	11.6×	28.2×	36.6×	102.2×	14.0×	10.0×	10.7×	14.3×
1955	7.5×	14.1×	13.2×	12.4×	23.0×	20.9×	125.6×	14.1×	9.6×	10.2×	11.3×
PRICE—Year End㉔											
Per cent change 1955-59	+31.0%	-2.1%	+41.0%	+10.4%	-18.0%	+63.4%	-30.7%	-15.1%	-5.5%	+18.0%	-13.5%
1959	44⅞	49¾	85½	50¼	76	51¼	1,321	42¾	54½	55¾	44¼
1958	47⅞	57⅛	85¾	59¾	103½	56½	1,755	44½	65¾	59¾	47¼
1957	38⅜	49⅞	62⅜	46	90½	40⅞	1,670	38¾	46⅛	42⅜	35⅞
1956	44	58¾	59⅜	49¼	118½	60	1,220	56¼	61½	57	62½
1955	34¼	50⅞	60¾	45½	92⅛	31⅞	1,010¾	50¾	57⅛	47¼	51
RANGE											
1959	50¼-40	59¼-45⅝	87⅞-71⅛	62½-45⅝	106¼-69⅞	62½-45½	2,165-1,275	53¼-40⅝	67⅞-48¼	64⅞-50	52½-39¼
1958	53¼-37¼	60¼-47½	89 -55¾	61⅝-43¼	114⅜-81	61⅜-37½	1,865-1,360	52¼-39	66⅜-46¾	59⅞-42⅝	50 -35½
1957	60⅜-37⅜	68½-47⅝	76½-54⅜	59⅞-43¼	147½-88½	60⅞-36⅜	2,000-1,210	60⅜-37⅜	68¼-45½	62¼-40½	62¼-35½
1956	46¼-31⅞	62⅝-47½	70 -53¼	58¼-43⅜	121½-91½	65⅜-30⅝	1,300- 940	61⅞-49	72⅜-55⅜	59⅞-39⅜	65 -48½
1955	35½-27¼	51⅜-35½	60¾-41¾	49⅜-36⅜	115¼-82	33⅞-23½	1,080- 740	50½-39	59¾-48½	42⅜-35	53¾-42¾
DIVIDEND (Per Share)											
Per cent change 1955-59	+58.3%	+28.6%	+26.8%	+39.9%	+14.3%	+28.8%	+200.0%		+11.1%	+25.0%	-20.0%
1959	$ 1.32	$ 2.25	$ 2.60	$ 2.00	$ 2.00	$ 1.60	$ 4.00	$ 0.99	$ 3.00	$ 2.50	$ 1.92㉕
1958	1.32	2.25	2.30	2.00	2.00	1.50	3.00	1.61	3.00	2.50	1.69㉕
1957	1.32	2.25	2.30	1.90	2.00	1.45	None	2.22	3.00	2.50	2.09㉕
1956	1.05	2.10	2.26	1.65	2.00	1.30	None	2.22	3.00	2.37	2.26㉕
1955	0.84	1.75	2.05	1.43	1.75	1.25	3.00	2.06	2.70	2.00	2.40㉕
PER CENT YIELD											
1959	3.0%	4.5%	3.0%	4.0%	2.6%	3.1%	0.3%	2.3%	5.5%	4.5%	4.4%
1958	3.5%	4.7%	2.7%	3.3%	1.9%	2.7%	0.2%	3.6%	4.7%	4.2%	3.6%
1957	4.1%	4.7%	3.8%	4.1%	2.2%	3.5%	—	5.7%	6.5%	5.8%	5.8%
1956	3.9%	3.6%	3.9%	3.4%	1.7%	2.2%	—	3.9%	4.9%	4.2%	3.6%
1955	2.5%	3.5%	3.5%	3.1%	1.9%	4.0%	0.3%	4.1%	4.7%	4.2%	4.7%
CASH FLOW (Per Share)㉖											
1959	$ 8.24	$ 5.35	$ 10.48	$ 6.24	$ 6.14	$ 2.42	$74.24	$ 11.80	$ 10.60	$ 12.01	$ 8.69
1958	8.85	4.89	9.54	6.38	5.65	2.22	66.41	10.52	11.42	10.98	8.07
1957	11.88	5.83	10.41	6.92	6.82	2.36	69.02	12.81	12.30	10.56	9.05
1956	10.42	5.57	9.38	6.54	6.24	1.79	32.65	11.52	13.03	11.33	8.85
1955	9.15	4.83	8.57	5.84	5.97	1.65	25.92	11.62	13.32	10.51	8.79
PRICE CASH FLOW											
1959	5.4×	9.3×	8.2×	8.1×	12.4×	21.2×	17.8×	3.6×	5.1×	4.6×	5.1×
1958	5.1×	9.7×	9.0×	9.4×	18.3×	25.3×	26.4×	4.2×	5.8×	5.4×	5.9×
1957	3.3×	8.2×	6.0×	6.6×	13.2×	17.3×	24.2×	3.0×	3.6×	4.0×	4.0×
1956	4.2×	10.6×	6.4×	7.5×	19.0×	33.5×	37.4×	4.9×	4.7×	5.0×	7.0×
1955	3.7×	10.3×	7.1×	7.8×	15.5×	19.0×	39.0×	4.3×	4.3×	4.5×	5.8×

N A Not Available

① Adjusted for subsequent stock splits and stock dividends.
② Excludes non-recurring item of $9.2 million ($0.28 per share)
⑫ Before special charge of $2.5 million ($0.07 per share).
⑬ Before special charge of $5.9 million ($0.17 per share)
⑯ Includes cash paid in lieu of fractional shares of Standard Oil (N. J.) distributed
⑭ Figures not comparable with other tabulated companies.
⑳ Years ending August 31.

factors as personality, temperament, emotion, etc. These complex concepts represent a real challenge to a Security Analyst. Nevertheless, the clue to a company's real value is to be found in a successful analysis of its management.

Now as I suggested earlier, when an Analyst visits a company he'll ask a lot of questions. Analysts, after all, are frequently indistinguishable from people. In fact, any time my own ego appears to be getting a bit out of hand, my favorite critic brings me up short with "If you're so smart why aren't you rich?"

In addition to questions, however, Analysts draw a host of inferences from observations and impressions received while visiting a company and touring its plant(s).

As an example, on one occasion when I was travelling on a mid-west itinerary the first stop that I made was at a large industrial concern in St. Paul. As I approached the group of buildings which comprised the company's offices and plants I was impressed by the beauty of the landscaping surrounding the entire area.

While not *all* of the buildings were new, the over-all architectural plan was one of simplicity and function; the buildings were all clean, well painted; and the grounds surrounding them were unusually well kept. As I entered the main gate a member of the company's security force approached and as soon as I gave him my name he affected instant recognition and said, "Oh yes, Mr. Johnson, we're expecting you."

Thus before I had even entered the company's offices I had received a favorable impression of management. The president had alerted his security officer at the gate to expect and to admit me. By the time I had driven from the gate to the parking lot, and had entered the administrative building, the gate security officer had telephoned the receptionist advising her of my arrival so that when I entered the front door the receptionist greeted me by name, took my hat and coat, and immediately escorted me to the president's office.

I cite this illustration because, while it is not altogether unusual, it is by the same token far from typical. Perhaps consideration of such seemingly trivial things may appear without justification but an Analyst's ultimate evaluation of a company—and its management—are predicated upon impressions received while visiting the company.

First Impressions Important

Now, many things may be inferred from such a reception as that which I have just described, but it would certainly appear elementary that here is a management which is alert, considerate and business-like. Thus, by the time I met the president and was invited to sit down in his office I had already formed certain favorable opinions concerning this company.

Mr. B's manner was very friendly but he also recognized the value of time—mine as well as his. This became apparent when he asked his secretary to invite the other members of his management team to join us so that I might meet them also. Within a matter of minutes these men were all in his office. He introduced me to them and we started to chat. It was obvious that each of the executives not only had anticipated my visit but, in addition, had anticipated many of the questions which I might ask. Each of them had brought with him whatever materials he thought might be helpful in giving me the information I wanted. The vice president in charge of sales, for example, had brought along charts and graphs showing historical results as well as projections for several years in the future.

The vice president in charge of production supplemented his answers to my questions with projections of production expected to be achieved as a result of new equipment recently installed, as well as expanded production on existing assembly lines. The controller had brought along an accounting record of *costs,* as related to production and sales. He pin-pointed several ways in which fixed costs were being reduced and the manner in which the cost of new equipment and machinery was being allocated. The industrial relations executive described in detail the status of the company's relationship with the several unions which were represented in the company's operations.

Incidentally, are you aware that matrimony was probably the first union to defy management?

The vice president in charge of research and development outlined in detail the program for R and D expenditures and the manner in which funds allocated for R and D were expected to be utilized.

My appointment had been for 10 o'clock and by the time I had finished talking with the company executives it was 12:30. The president had previously invited me to join him and his associates for luncheon in the company cafeteria—which provided one further opportunity for observations and impressions.

Touring and Asking

Following lunch the general manager conducted me on a tour of the entire plant during which time I was given every opportunity to ask questions. And, I asked not only department heads but also the men working in the plant; i.e., those on the assembly line, maintenance men, drivers making pick-ups and deliveries, scientists in the research division, and engineers in the planning department.

Now, as you may well imagine, I learned a great deal about this company on that trip through the plant. I learned a great deal about the way in which the company plans its production, the various methods used in the actual manufacture of its products, final inspections, packaging of the products, and preparation for shipment.

Moreover, in addition to these things, I learned a great deal about the company's over-all basic policy and general philosophy of doing business. And I didn't learn this from the answers to any of the questions which I asked (not because these fellows didn't know the answers nor—in this case at least—because I failed to ask all the questions). But, I learned a lot about this company by simply *looking.*

Analysts, by nature, are a curious and inquisitive breed. We are frequently accused of snooping—and even sometimes of prying. But in our profession you train yourself to *look,* to *look* at, to *look* around—yes, and even to *look* through. And while we are doing all this *looking* we usually observe, form impressions, and draw certain inferences which, in turn, when pieced together, will give us a pretty good picture of a company as we see it.

Just as an example of one of the things upon which opinions and impressions are based (for want of a better phrase) is *housekeeping*. Here again, this may seem trivial, and by itself that is undoubtedly true, but, as a small part of a larger whole, housekeeping can be quite significant. The degree of cleanliness of the floors in a plant for example, of the machinery in the plant, yes, and even of the men working in the plant, all these things suggest an overall tone.

Things such as these are what ". . . Analysts want to know."

On another field trip which was made some time ago my experiences were somewhat different. In this case, while discussing the company's income statement with the president and financial vice president, a question arose involving reported earnings per share. As you know *earnings per share* not only may fluctuate rather widely but, in addition, are occasionally subject to somewhat arbitrary determination. There are, for example, several ways by which the per share earnings of a company may appear either larger or smaller than they should be. Let's look at some of them:

1. By the allocation of certain items to a surplus account, rather than to an income account—or vice versa.
2. By over or understating amortization or sundry other reserve charges.
3. By varying the capital structure as between senior and junior securities—e.g., debt and equity.
4. By the optional employment of large amounts of capital not used directly in the conduct of the business.

Much the same as it is possible to distinguish between excellent and average *managements* in various companies, it is also possible to distinguish between alert and indifferent *Analysts*. And it is precisely within fields such as this—intricacies of corporate accounting and financial policy—that such distinctions may be made.

Analyzing corporate income accounts frequently offer unbounded opportunities for astute Security Analysis . . . for critical comparisons . . . for discovering a state of corporate affairs quite different from that which might be indicated by the published per share earnings. Thus in the study of corporate income accounts ". . . the Analyst wants to know," among other things:

1. What are the *true* earnings for the period studied.
2. What implications does the earning record of the company suggest as to the *future* earning power of the company.
3. What *items* in the statement of income should be considered and what standards followed in attempting to draw certain conclusions as to a possible reasonable valuation of the equity shares.

Now, the statements of most important companies today are audited by independent public accountants and their reports are usually dependable within the sphere of accounting accuracy. Nevertheless, from the standpoint of analysis, these audited statements occasionally require critical interpretation and, not infrequently, certain adjustments—especially with regard to three important considerations:

1. Non-recurring profits and losses,
2. Operations of subsidiaries or affiliates, and
3. Reserves.

Thus, when an Analyst questions a treasurer or financial vice president concerning a particular item I hope it will be remembered that the Analyst is not attempting to pry into matters which are none of his affair . . . nor is he either explicitly or implicitly attempting to question the methods employed by the controller. It is simply that in order to permit him to prepare a true analysis of a company's operations it may be necessary for him to inquire as to how certain items within the income statement have been treated.

Analyzing the Facts

For example I recall one case in particular in which a company's reported net income and earnings per share for a given year appeared to be very favorable. However, on inquiring of the company officials as to the exact source of the income it was revealed that approximately 35% of the total amount reported as net income resulted from the sale of certain items of fixed assets. So, in preparing an analysis of this company it was necessary to deduct the amount received as a result of this sale from net income, in order to permit a more true reflection of the *operating* results of the company for that year.

Another example of ". . . what Analysts want to know."

Other situations which may require adjustments are such things as profit or loss on the sale of marketable securities, discounts or premiums on retirement of capital obligations, tax refund, etc. All of these items illustrate situations in which accounting procedure allows considerable leeway to management in the method of treating non-recurring items. While it is of course entirely within managements' province to treat such items as they deem advisable, from the standpoint of the Analyst such entries must be eliminated from any comparison or calculations of earning power, otherwise a true reflection of the company's capabilities is not possible.

Here's another example illustrating the necessity for Analysts to inquire concerning certain entries on an income statement. I recall an instance in which a company reported as income for the year a rather sizeable amount which it had received in settlement of a patent

suit. Here again such an entry is obviously of a non-recurring nature and should have been deducted—or at least distinguished—from income reported as a result of the company's operations.

Generally speaking such things are stated quite clearly in a company's annual report. However, there are occasions when it is necessary to inquire of corporate officials as to precisely the *source* of income which has been reported.

A still further item in a company's income statement which frequently deserves more than a casual glance involves *inventories* and *reserves* for possible inventory losses. Analysis of these items is particularly advisable in attempting to compare companies within an industry in which inventory losses might normally be anticipated due, perhaps, to cyclical trends in the price of the raw materials used.

Inventory Losses Cited

For example—just to cite a single illustration—consider the meat packing industry. Some time ago an Analyst friend of mine called my attention to a situation in which two meat packing companies handled the matter of possible future inventory losses quite differently:

Company A set up a reserve of something over $1,000,000 for possible inventory losses. These funds were taken partly from surplus and partly from income. The following year the controller reduced the opening inventory by this reserve which, in effect, increased the reported profit of Company A for that year by something in excess of one million dollars. However, the SEC (Securities and Exchange Commission) required the company to amend its registration statement so as to credit this amount to surplus, not to income.

On the other hand Company B set up a reserve for future inventory losses and reduced its reported earnings by a similar amount. Some years later, due to price changes, a decline in the value of the company's inventory did in fact occur. However, instead of drawing on the reserve set up for this purpose, Company B's controller charged the full loss against the year's operating results, and then transferred an amount from the reserve account directly to surplus.

Thus, Company B's income for this period actually was *understated* since amounts were actually taken out of income and placed in the surplus account.

So, with respect to *inventories* an Analyst must attempt to make whatever adjustments may be necessary in comparing two companies which may be using somewhat different methods of inventory accounting. For example, some firms take the inventory at the close of the year at the lower of cost or market, then by adding purchases to the opening inventory and subtracting the closing inventory the "cost of goods sold" is obtained.

Other firms, however, prefer to take as the cost of goods sold the actual amount paid, for the most recently acquired lots; i.e., LIFO (last in first out). The theory here of course is that the selling price may be related mainly to the current replacement price, or the recent cost of the article sold. This treatment obviously is opposed to the FIFO—first in first out—method.

These also then are things that ". . . the Analyst wants to know."

A still further point which deserves comment concerns the item *"Depreciation."* Most companies follow the standard policy of charging an appropriate depreciation rate against each class of depreciable asset. (This can be determined; i.e., the individual practice of a given company—by checking the New York Stock Exchange listing application, or by examining a prospectus or registration statement).

Nevertheless, an analysis of the depreciation item is advisable, for frequently very significant inferences may be drawn from the results of such an examination.

Depreciation Significant

Of particular significance is an analysis of depreciation in examining or comparing companies in, for example, petroleum or mining industries. Here, in addition to ordinary depreciation, companies in these industries must allow also for *depletion* of their *reserves*. Moreover, companies in the petroleum industry have additional charges for intangible drilling costs and for unproductive leases. These items are important—and significant—because of their bearing on true profits.

The typical large oil producer normally spends substantial amounts of money each year on new leases and on new wells. These additional holdings are needed of course to compensate for the reduction of reserves through production. For example, a new well *may* yield as high as 80% of its total output during the first year. Thus, nearly all the cost of production from such a well must be written off in a single fiscal period, and, from an accounting standpoint, most of the earnings from this source, in reality, are a return of capital. Thus you can see if the investment is not written off rapidly, through such things as depletion charges, both the profit and the value of the property account will be grossly overstated.

So, in addition to questions concerning both depreciation and depletion ". . . Analysts also want to know" about the accounting treatment of such things as unprofitable leases and intangible drilling costs.

Now, before concluding, there's one further point about which Analysts want to know: your company's *competition*. Some of the most valuable clues I've ever discovered have resulted from discussions with competitors of a firm which I have been studying. And I don't mean to suggest that such discussions produced any necessarily derogatory statements. It is simply that, frequently, a company's competitors may have observed something about the company's operation which, because of obvious *sub*jective limitations, the company itself has not recognized at all. A case of the ". . . forest for the trees."

Speaking of competition, one of the measurements of the capability of management is its ability to cope effectively with competition. And I don't mean merely competition from such things as lower prices but, per-

haps even more significantly, competition from new commodities, new technologies, new sources of supply, and new types of organization. These are things "that Analysts want to know."

In conclusion, I should like to stress one point which to me is all important, and in fact might serve to summarize my observations. That point is: In answer to the question "What Do Security Analysts Want To Know," my answer would be *we want to know "you."*

I am speaking of *"you"* as members of *management.* As I have suggested before an estimate of a company's prospects, in great measure, is predicated upon an analysis of that company's management.

After an Analyst has conducted a thorough and comprehensive preliminary review of a company's operations for many years in the past—including the preparation of spread sheets, similar to the one which we discussed here — an accurate analysis of a *specific company* may depend upon an *analysis of management.*

That's why I think a most appropriate answer to "what do Analysts want to know" might be *we want to know "you"*—for only in knowing *"you"* will it be possible for us to attempt an evaluation of the prospects and possibilities of a company and the prospective longer term value of that specific company's securities.

ANALYSTS TO PROBE HAWAIIAN ECONOMY

(*continued from page* 3)

One of the "Big Five," Castle & Cooke, having invested heavily—directly and indirectly—in the Hawaiian Pineapple Co. (Dole) continued to finance other businesses which stood to benefit the economy of the Islands —sugar, shipping, insurance, fisheries, and even Macadamia nuts, the latter a million dollar gamble with a 10-year wait for full production of a new orchard.

In fact, Castle & Cooke today is headed by Malcolm MacNaughton, son of the late E. M. MacNaughton, long-time president of the First National Bank of Portland, Oregon, and president of the Portland Oregonian —before its sale to the Newhouse chain—as well as being president of Reed College. Another son, Boyd MacNaughton, is president of C. Brewer and Sons, another member of the "Big Five." Thus, two of the "Big Five" today are directed by former mainlanders—representative of the "new management generation."

And who has not heard of the famed Captain Matson who sailed his schooners from Hawaii to the mainland, carrying raw sugar. In connection with his shipping services, Captain Matson made the technical jump from sail to steam in the mid-1800's, and his passenger volume rose sharply—particularly in the early 1900's.

Captain Matson's company built new and larger luxury liners to accommodate an ever increasing number of tourists romantically lured to Hawaii. And it was during this period that Matson also built several luxury hotels for the growing number of Island visitors.

However, in the 1940's the airplane threatened to reduce the Islands' tourist trade — which had been pioneered by Matson—almost to the vanishing point. Yet, in retrospect, such fears proved groundless. For actually the airplane was destined not to reduce, but to increase tourist travel far beyond levels ever visioned. And sensing these possibilities, Matson attempted to acquire an airplane route from the American mainland to Hawaii. However, the Panama Canal Act of 1912—forbidding ownership by shipping interests of allied transportation media—was still the law of the land, and as a consequence such request was denied by the Civil Aeronautics Board.

Then, with tourists increasingly favoring planes over steamships, the Matson Line's passenger volume was decimated in the ensuing decade, and as a result —with passenger travel greatly reduced—Matson contracted its passenger services sharply, and currently is concentrating its shipping efforts in developing lucrative freight traffic. Within the past decade, and despite rising tourist traffic, Matson (for financial reasons solely) sold all of its hotel interests to the Sheraton Corporation.

The problem of land ownership in Hawaii is somewhat complex as contrasted with the common experience of other countries, including our mainland. For just as the "Big Five," over the years, dominated agriculture and industry in many of the Islands, in similar fashion ownership of the land area of Oahu (on which Honolulu and the famed Waikiki Beach is located), has also been concentrated in relatively few hands — the largest and most desirable parcels being owned by the Bishop Estate, presently administered by government appointed trustees. Moreover, such land concentration is in wide contrast with the situation in our other new state, Alaska, where millions of acres are still available.

As for Hawaii's agriculture, it is already the most highly mechanized of anywhere on the globe; and the sugar industry has long supported its own research (Hawaiian Sugar Planters' Association) in contrast with state-supported agricultural stations on the mainland.

The San Francisco Financial Analysts, undoubtedly, will consider Hawaii's future potentials in terms of sugar (a most fluid situation as a result of the Cuban upheaval); pineapples (second only to sugar in dollar volume); and tourism (an ever-growing industry sure to keep right on feeding more and more dollars into the Hawaiian economy). Other elements—except for the extremely vital dollars from defense activities—are said to be relatively unimportant to our 50th state.

Finally, investment opportunities in Hawaii are more likely to be found today in its burgeoning service industries. But our West Coast Analytical friends may well discover additional investment opportunities for mainland capital. In fact, one Hawaiian financier has been quoted as saying: "By 1965, mainland capital will be in control here, with an estimated ownership of around 50%."

However, rather than prejudge any findings, we await the observations of the *San Francisco Financial Analysts,* following their early 1961 visit to the prosperous, bustling, breeze-caressed "string of Pacific pearls."

A long way from curb service a la cart

YESTERDAY — Back at the turn of the century, when automobiles were jeered as well as cheered, gasoline was dispensed by hand. It was poured from a measuring can into the tank through a chamois-screened funnel. Remember? Later, it was hand-pumped into a glass bowl on top and flowed by gravity down through the hose.

TODAY — modern service stations have automatic, meter-computing pumps. Texaco alone has over 38,000 stations in the U.S.A. They are manned by skilled Texaco Dealers, offering quality Texaco products. Aided by research and the most modern refining and transportation techniques, Texaco has become one of America's leading petroleum marketers.

TEXACO

Money Markets in Asia and the Middle East

by Carl L. A. Beckers

MY SECOND VISIT TO THE ORIENT was loaded with "near misses," and I started to look upon myself as a harbinger of things to come. I was ahead of a "Communist inspired" uprising in Japan, narrowly escaped student riots in Turkey and I might have been blamed for the big blaze in Hong Kong's factory district except for the saving grace that all these things followed in my wake. The trip was far from uneventful! It was educational, enlightening and filled with personal pleasures as well. I felt "at home" as I renewed old acquaintances in Japan and Hong Kong and went on to make new ones in Thailand, India, Lebanon and Turkey. In our Embassies and in the business world I was welcomed as a friend and companion.

It is interesting and significant to note that the initials of the four countries added to my itinerary spell TILT. They control the balance of power that could TILT the scales in favor of either free enterprise or Communism.

My travels included these six countries because of the growing importance of their markets. If American corporations are to share them it is necessary they produce goods within these areas. It is necessary for competitive reasons. It is necessary to utilize low cost labor available there. It is necessary to avoid the barriers to the sale of American goods in these markets—necessary to overcome exchange restrictions, tariffs and other trade obstacles.

I learned much about the fundamentals behind the creation of the barriers to our sales. The countries under review not only have problems necessitating stringent rules but it is urgent they solve them quickly. They must balance their trade promptly or they will not be able to pay for imports of food and raw materials needed for survival. The time is now.

Despite the great diversity of the places I visited, the circumstances they face are alike in many respects. One or more of these countries lack some necessities of life, such as adequate food, sanitation or local industries providing for their own needs. They do not have a large and capable middle class and trained people to provide competent civil servants, business managers, engineers, foremen and the other skilled personnel necessary to make a modern industrialized economy function. Some countries are without the raw materials necessary for their own economy. The result of these various deficiencies is a foreign exchange problem of greater or lesser severity. The reaction of these states to this varies depending upon differences in the health, energy and literacy of their people, their stage of development, their traditions and points of view. I shall develop this further in my discussion of individual countries.

The fate of the nations in the part of the world I visited is important to the West in its continuing struggle for survival against communism. Viscount Hailsham, in a recent address at Westminster College, said:

"Both sides have the bomb. The balance of power has re-emerged as the dominating factor in world politics.

"The continued poverty of underdeveloped countries, their sensitive natural pride, their deep antagonisms and their great desire to join the ranks of advanced peoples form the arena in which the outcome of the struggle for the hearts and souls of men will inevitably be fought."

Politics and Economics

In appraising the developments in these countries it is difficult to separate economic from political problems

The Basic Position of the United States

The great change that has taken place in the economic position of the United States in reference to the rest of the world since the end of World War II is not generally realized and its implications not fully understood. At the close of the war we embarked upon an ambitious program of trying to help the free world and particularly Western Europe recover. For many years other countries suffered from a persistent "dollar shortage."

The United States, with the most productive economy in the world, the bulk of the world's gold and a persistent demand on the part of other countries for American dollars, was in a position to operate its economy without reference to the rest of the world. Our wages, costs and prices were only of domestic concern and had little effect upon the unsatisfied demand for American goods characterized by the dollar shortage.

Thanks to the great success of the Marshall Plan and our other efforts to help Western Europe's economic recovery, we are now in a position where we cannot disregard the rest of the world. Domestic wages, costs and prices cannot be set without regard to and effect upon the competitive position of American business.

Our budgetary policy, credit and fiscal policies, balance of trade and of payments are of vital importance to the health of our own economy and that of the free world. In a word, we are again subject to the discipline of a world market, and we must accept this discipline if we are to avoid serious trouble for ourselves and the West.

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since they are so interrelated. If these peoples, and particularly if India, should embrace communism in the hope that it presents a short-cut to industrial power it would be a real disaster for the United States. If Japan were to become neutral, this would greatly diminish our power and influence in the Eastern Pacific. These developments would weaken the free world not only politically but economically and would carry the threat that all of Asia might go communist.

Political instability is a general characteristic of the Orient and the Middle East. This is underlined by the overthrow of the South Korean and Turkish governments during my visit, by martial law in Thailand and the political demonstrations in Japan against the Japanese-American Security Treaty.

I shall not attempt to assess the political situation too closely, but merely point out the importance of the political problems.

We face a difficult dilemma. It is important for us to do what we can to help these countries develop economically and remain in the free world. While it is important we win the cold war we must keep domestic and foreign demands upon our resources within sustainable limits so as not to put too great strains upon our economy and undermine the value of our dollar. As Barron's Weekly states: "More than ever before in its history the U. S. must seek to reconcile domestic policies with stern global realities."

Why Produce Abroad?

Since these countries must export in order to obtain the dollars with which to buy raw materials and food, to say nothing of goods from the United States, they have a balance of payments problem. Their exports are restrained by many factors; so too is their supply of other currencies. Hence foreign exchange is controlled by the government. This regulation is utilized to finance imports to which the government gives priority—not to finance the import of consumer products. Frequently I was unable to buy American goods. Therefore, if American corporations are to sell in these markets the only practical answer is to manufacture there.

Nevertheless serious considerations are involved in the decision of a major American corporation to do part of its manufacturing in an Asiatic country. Even though necessary to sell its products there, management must consider these questions: What effect will there be on domestic markets? Will it result in loss of jobs to American production workers — affect the various skilled personnel and even the executive staff necessary to its operations? (Our adequate supply of competent business executives, highly trained technical and professional personnel and skilled workmen represent one of the great elements of strength of American business.)

And from the standpoint of our country as a whole, how will it affect our adverse balance of payments?

JAPAN

The Japanese have made astounding progress in stabilizing their economy in the 2 years since I visited their country. Japan is booming—her foreign trade is balanced—her financial position both internal and external has improved. The standard of living has been raised.

A great deal of credit for this progress is due to the Japanese as individuals, who supply their own country with ample low cost, industrious, skilled labor. Credit also goes to competent business management, the willing practice of frugality and thrift, and the determination of the people to improve their lot in life regardless of any sacrifices.

Her most important resources are human resources. Adequate rainfall and access to fishing grounds are among the few important natural resources. The country's use of resources are evident through the improving status of the nation almost day by day.

Business is booming and there is little unemployment —only 500,000 out of a total work force of 43,000,000. By contrast after my 1958 trip I reported "The employment picture is not rosy." Japan too is faced with rising labor costs as a result of full employment and a high level of business activity. However, hourly wage rates are still much lower than in the United States. Despite booming business and wage inflation, prices have generally remained stable except for the rising prices of consumer goods.

The gross national product last year was 32 billion dollars, a 13% increase over 1958. The steel industry is increasing its capacity, while prices are remaining stable. A steel industry official told me output was 18 million tons last year and 22 million tons is estimated for the fiscal year 1960. He said that between 1958 and 1959 steel production increased 30%. To show how impressive this is, I reported after my 1958 trip that a proposal was underway to increase steel production to over 20,000,000 tons by 1962. This goal will be exceeded in 1960, two years earlier. This steel official estimates that by 1975 steel production will be 38 million tons.

Trade Balanced

Two years ago imports from the United States were $1,200,000,000 per year and exports to the United States only half that amount. Now Japan has not only balanced her over-all foreign trade account, but also her commerce with the United States, her biggest customer. Still this would not have been possible except for the help of United States military expenditures.

Of particular value are the countries with whom she has a favorable trade balance. They include Hong Kong, Thailand, Formosa, Liberia, Singapore, and South Korea. Her exports to Formosa alone amount to about $100,000,000 a year. It's understandable therefore that Japan has not recognized Red China. It does not want to interfere with its big business with Nationalist China on Formosa (Taiwan).

Japan has greatly improved its financial position. Its foreign exchange reserves increased $406,000,000 in 1959, the second year of gains. It has done so by expanding exports, by developing its own sources of foods

and raw materials and conserving foreign exchange by other methods. Intensified production of rice and aggressive fishing have improved the food situation. To strengthen its position in raw materials, it has made deals to get iron ore from India and oil from the Arabian countries in exchange for Japanese manufactures. The Government has used other methods to conserve foreign exchange, witness its arrangement to pay reparations due the Philippines, Indonesia and Burma by installing plants in those countries.

A strong constructive factor in the internal financial situation is the saving and investment habit of the thrifty citizens. Savings amount to almost 30% of gross national product or 9 billion dollars per year. The high rate of saving permits a rapid expansion of industry that would be impossible without severe inflation if it were financed entirely through credit expansion.

Savings go into insurance funds, the Development Bank and equities. About a billion dollars a year of savings go into the Development Bank. Some saving goes directly into stocks and also to investment trusts. Mutual funds are growing rapidly and a large proportion of workers invest in these trusts. Corporations are gradually increasing their shares outstanding and offer new shares to existing stockholders at about one-third of the market price.

However, despite the high rate of saving and investment, business debt is increasing. So too is the money supply. The latter increased last year by 130 billion yen and commercial bank deposits increased one trillion yen last year. An official of an important bank said that before the war capitalization of industry was 30% debt, 70% capital. Now these percentages are reversed. Most banks are in debt to the Bank of Japan and lend a very large proportion of their deposits to business. Because of this inflationary trend the bank has given close attention to its discount rate, raising it again recently.

On my 1958 trip I noted little installment buying. There is more now but still far less proportionately than in the United States. Home loans are provided through the government and auto loans through automobile manufacturers and banks.

Improved Standard of Living

The standard of living is improving as a result of full employment, the high level of business activity, rising wages, the balancing of foreign trade and personal savings. The government estimates the national income will double within the next ten years. Besides, the government is permitting manufacture of more consumer goods for domestic purchase. Thus the typical family can own television, mechanical household equipment and perhaps even an automobile. A family car still costs about one million yen or $2,700 but the government has urged the manufacturers to make a "peoples' " car for $1,000 or $1,500. This will be difficult as there is no mass market and the government places a heavy excise tax on cars sold within the country.

Because of the improvement in the foreign exchange situation and its achieving a balance of trade, Japan has been enabled to relax its currency regulations. To Americans and other foreigners, this is significant. It means money invested or profits made there can be recovered quicker than before. It means we and the Europeans can continue to expand manufacturing there with less restriction on our investments. Fundamentally, however, it means another country is approaching the area of free exchange, so valuable to our way of life.

The stock exchange is booming, reflecting the high level of business activity, the gradual increase in shares listed, the growth of mutual funds and the investment of the savings of the people. While I was in Tokyo the stock market reached an all-time high. Today it stands at another peak. The Japanese "Dow-Jones" currently is over 1,200, up from 600 in the two years since I first saw Japan.

Industry, Domestic and Foreign

Most industries are operating at near capacity but a few industries are depressed, despite the fact that unemployment is at minimum levels and wages are increasing. Coal mining is at a low ebb, just as in Germany and for the same reason, because Japan is importing competing fuels. The shipping and fertilizer industries have felt the effects of decreasing demand.

The automobile industry is booming. There are several important companies. One, the Toyota Motor Company has the Toyopet Plant, near Nagoya producing 10,000 cars and 7,000 trucks per month. It makes 14 models not only for use in Japan but for export to a total of about fifty countries. Another company, the Isuzu Motor Company has a unit assembling the Hillman Minx. The operation consists of the assembly of parts completely made in Japan and is continued on license of the government until 1962. Only two cars of foreign design, the Hillman and the Renault are being produced in Japan. The Japanese permitted the Hillman to come in because of a desire to learn the manufacturing process. The Prince and the Datsun are popular cars of domestic design and production visible in large numbers on the streets. Both are completely Japanese.

The future of industry and trade depends to a large degree upon the policies of other countries, particularly the United States. As the United States is Japan's most important customer, our willingness to accept Nippon imports is of vital importance to this industrious land. Britain is likewise an outlet of value. So it is notable Japan and Britain concluded a new trade agreement in July. This will expand the volume of trade between the two countries by 10% each way.

Our participation in manufacturing in this island empire has increased substantially and promises to increase further. The country is outstandingly attractive for our participation in production. The established pattern for American companies wishing to manufacture there is to establish a joint venture with private interests there, but permission of the government must be obtained in order to begin business and assure withdrawals of dividends and capital. Recently one of our major corporations

made a tentative arrangement to manufacture jointly with one of the great family groups. This particular project would have injured some small local industry. So business representatives lobbied against it vigorously and as a result the government would not give its approval to the deal. In the past, efforts of one of our airlines to establish hotels in Tokyo met a similar rebuff. A short time ago, however, the Hilton Group made arrangements to come in sometime soon.

Union activity is increasing and communist infiltration is a serious problem. The Soyho Union (controlling school teachers and other important labor groups) is communist led and was very active in the riots against Kishi, Eisenhower, and the American-Japanese Security Treaty. In 1958 I said:

"It is not yet clear whether the establishment of unions and welfare state programs may tend to keep Japan non-communist or whether they may be turned by the communists to their own advantage."

Recent Political Developments

In 1958 I viewed communist activities as a potential cloud upon the horizon and now they have become a more present danger. However, the anti-American communist-inspired agitation involves only a noisy and aggressive minority of the population. I believe the majority of working men and small farmers as well as businessmen, bankers and government officials are essentially conservative, anti-communist, industrious and efficient. I am hopeful that this island empire will continue to be the cornerstone of the free world in the Far East although the outlook is doubtful at present.

Whatever the political developments may be, whether Japan becomes neutral or even if parliamentary government should break down paving way for a dictatorship of the Left, they will not alter the basic economic facts. She must sell manufactured goods in foreign markets to pay for the raw materials and foods which she must import. Her best assurance of doing so is as an ally of the West. If she were neutral the West would be under considerable temptation to place restrictions on imports from Japan. Foreign corporations would be more reluctant to produce there fearing that neutralism might be merely a step on the road to communism.

The business community and government officials are aware of the advantages of partnership with the West. A communist Japan, which I regard as unlikely, would result in her industries being put to work to supply communist China. She might receive satisfactory returns at first. But in the long run it could impair her economy and impoverish her people.

Nonetheless, revolutions sometimes have been carried out by very small but well-organized and fanatical minorities—notably the Russian revolution in 1917.

HONG KONG

Hong Kong is a combination of Miami Beach and New York for display of wealth, new construction (both commercial and residential) and trade with the world. Within the last year cost of new buildings started has doubled. Possible participation of Pan American Airways in building a luxury hotel developed while I was there. It is needed as the jets are ahead of hotels throughout the world. To us from the Middle West accustomed to the safety of distance it is incongruous to justify the investment of millions of dollars in apartments, office buildings and factories in an area completely undefended and within range of machine gun fire of the Chinese Reds. Nevertheless some of the smartest money in the world is invested here. Why should this be? There are two reasons:

First, those who invest there know the Red Chinese benefit from this hole in the bamboo curtain, and the trade between Red China and the West which its present status facilitates. The reds need and value this outlet to non-communist markets to get hard money, just as anyone would swallow his pride to find and sell a customer.

The second reason for investment is its favorable business climate offsetting the risk of seizure. Hong Kong has ample capital, freedom from currency regulation, low taxes and good profit margins. It has ample low cost labor and a minimum of union problems. Therefore it remains not only the great free port of the world but in addition has become an important manufacturing center offering many advantages.

Business is booming. Textile and plastic manufacturing in particular are growing. A prominent fashion clothes plant is operating seven days a week, two shifts of ten hours each in producing cotton textiles. For the working force this is six days of ten hours each, then a day off. This and other companies also produce silk, hand cut and tailored. Profit margins before taxes and depreciation are satisfactory. Generous depreciation charges are allowed for tax purposes. Many nations are represented in the ownership of Hong Kong island and Kowloon enterprises. In some instances Red Chinese are buying into textile plants.

Wages are about 20¢ per hour but fringe benefits, such as dormitories for workers, add to wage costs. These pay scales are a reflection of the masses of Chinese available for work in the territory. But even with millions seeking work in shops and plants there is a shortage of skilled labor. For various reasons business men there recently accepted more business than they were able to handle. The result was late deliveries and some inferior merchandise. This produced mass cancellations of orders. Then followed an improvement in manufacturing practices so now the quality of the products produced, while not uniform, is improving. The textile industry in general is playing havoc with our textile manufacturers in the United States and with those in other parts of the world. However, as the textile industry obtains much of its cotton from the United States, the solution to this condition is not as easy as it may seem. The same observation may be applied to other Hong Kong industries using our raw materials. After all we sold Hong Kong close to $100 million of American items in 1959.

Being a free trade area there is no government regulation of exports or voluntary imposition of quotas. Hence industries are free to flood the Western world with their merchandise. This has produced some threat of boycott by United Kingdom or United States industries and unions. The result of this tussle is not yet clear.

Some money earned there and that which comes through this financial center is invested in our own security markets. New York Stock Exchange brokers have opened branch offices to facilitate this investment.

Hong Kong is a great trading center and the free port of the world even more so today than two years ago. Its value to the Chinese communists is indicated by the fact that the president of the Bank of East Asia there told me in 1958 that the Chinese communists derive the equivalent of 25 million United States dollars per month from exports through the port.

Hong Kong is the principal outlet for drugs produced in Red China. From there they are smuggled into the United States and other Western countries. The profits from the narcotics trade provide Red China with dollar earnings as well as funds to finance communist activities in the free world. Thus the drug traffic is an important factor in the cold war.

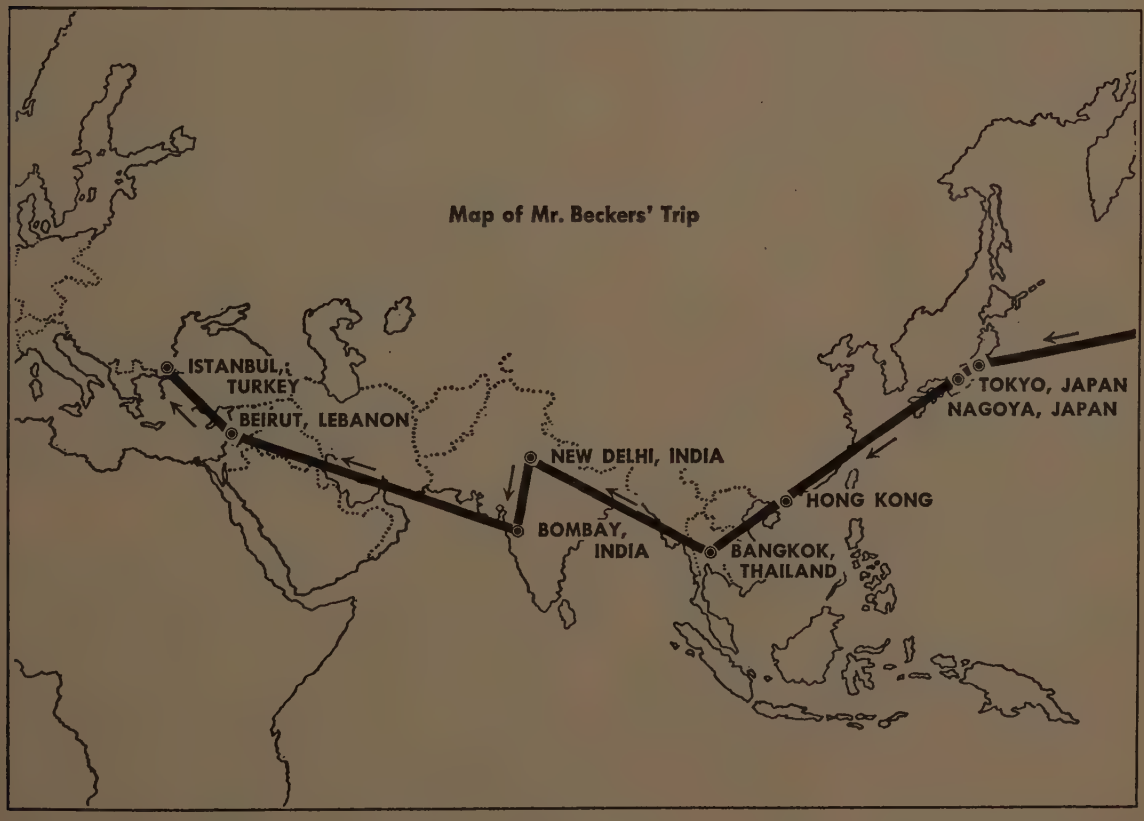
Land is a precious item and the prices of it are soaring. The last important site available for a luxury hotel is so valuable it will be put up for auction.

In this free money market I came away with the impression our dollar is highly regarded and considered sound. However, I must admit the first reason for the preference is "freedom of exchange." Its soundness is definitely up to us.

THAILAND

Thailand is primarily an agricultural country. Its biggest exports are rice, rubber, tin and teak. But this country is a victim of the self-sufficiency programs of its customers just as the United States has been. Its rice exports have been hurt by Japan's improved rice production and by our own surplus rice disposal program. Other products are facing competition from substitutes so the balance of trade has been going the wrong way. Government officials are well aware of these trends so an effort toward diversification is the order of things. This is not easy to accomplish for it requires foreign capital as well as management. Furthermore, the scope of potential industries available is limited by Thailand's location, weather and other factors. Among exports the silk industry is important. An American ex-serviceman, Jimmy Thompson, has popularized and helped in the development of this industry, which now exports Thai silks in large quantity to be sold at extremely high prices in the United States.

Thailand is three-fourths the size of Texas and has a



population of 22,000,000 growing at the rate of 2% per year. Its budget is not balanced and its foreign debt is increased. However, its money is sound, being backed 75% by gold and foreign reserves. The United States has supplied military support. Its trade balance is slightly unfavorable. The cost of living and wholesale prices are rising. Its gross national product is about two billion dollars and the per capita income estimated at $96. Land is becoming a prime investment even though the density of population is small.

The people and the government are anxious to improve their standard of living, health and education. The level of education is better than expected. Health is improving. The most pressing needs are transportation and electric power. A prominent engineering firm of the middle west is helping them provide both. This firm is building roads, bridges, water and power dams with money largely from foreign sources, principally the United States.

The government, in attempting to modernize the economy and improve the standard of living, is trying to attract United States business by tax concessions and by permitting the unlimited repatriation of both profits and capital. American corporations, however, have been somewhat reluctant to enter Thailand. Rumors the government itself has entered business or is planning to do so have served to create some hesitancy. This could account for a reluctance to accept the firmness of some government commitments. Oil interests may be faced with such competition in their refining operations. Again this trend represents an attempt by foreign governments to save every possible dollar of foreign exchange so valuable to their existence.

Although the government is endeavoring to improve living conditions, health and education, there is a question whether the improvement will come soon enough to satisfy the people.

INDIA

India has serious deficiencies and great potentialities. Which will prevail?

India, with a population of four hundred million, is second only to Red China with six hundred forty million. The combined population of these countries is over one-third of the total population of the world. For this reason, if for no other, the fate of India is of great significance to the free world.

This is the largest democracy on earth even though it is only thirteen years old. The government is relatively stable. The dominant Congress Party is strongly entrenched. It is a democracy in the sense it has free elections and parliamentary government. Its people appreciate democracy as shown by the fact that about 85% of its adult population vote, even using symbols to show their choice when they are unable to read. But in this democracy the individual lacks many of the freedoms we take for granted. There are economic restrictions — some due to the necessity of controlling foreign exchange and others resulting from emphasis on nationalized industries.

Its leaders are well educated. Its masses are illiterate and live under appalling conditions. Nowhere in my travels have I observed such poverty. In Bombay I passed thousands of people sleeping in the streets because they had no home—people with only rags to cover them, no jobs and no means of livelihood. In between the illiterate and poverty stricken masses and the educated leaders there is no large and competent middle class in the sense that such a class is found in the United States and in Western Europe.

It is estimated that only 1% of the population, or approximately four million people, have any purchasing power and thus the only taxable personal income, and the Indian in this 1% must spend much of his meager income for food and clothing thus leaving little for other expenditures. Here arises one of the serious aspects of India's race between her desire for improvement and her ability to achieve it. In her attempt to improve literacy (this has been done to an extent) she is creating an educated work force, perhaps before she is creating industry to support this force. At times half of the college graduates have found themselves unemployed a year after graduation. So an educated and unemployed middle class could constitute a danger to the stability of the government and might serve as a focal point for revolutionary activities.

The Population Explosion

Recent estimates place net population increase at about 2% annually. This means more than 8 million new mouths to feed each year.

In attempting to feed its rapidly mounting population and to progress from its present stage of development to an industrialized state with a self-sustaining economy that will provide jobs for its people, manufacture goods for domestic markets and export, India is faced with formidable difficulties.

Among these difficulties are the rapid increase in population which is outstripping the food supply, the primitive farming methods, the lack of trained business managers and the language barriers. A further difficulty is the need of vast amounts of capital from abroad to carry out its ambitious economic plans. The hostility between India and Pakistan, the rigid caste system and understandable prejudices derived from its long years under colonialism are also handicaps.

This nation represents the greatest possible contrast with Japan. Japan is poor in natural resources, India has an abundance (many minerals, for instance). Japan has an industrious, skilled, intelligent, frugal and efficient labor force. India has a plentiful supply of labor, but one that consists of people who are largely undernourished, uneducated and lacking in energy and physical stamina. Japan has a large and competent middle class to provide business managers, engineers, civil servants and all the other people needed to make an industrial society operate efficiently. India lacks such a middle class in the sense that it is found in the United States, England, Western Europe and Japan. The Ford Foundation recognizes this need and has made "two

THIS IS ONE OF THE MOST IMPORTANT PICTURES IN THE HISTORY OF MANKIND

The virus of poliomyelitis, magnified 65,000 times by an RCA electron microscope. Photo by Dr. A. R. Taylor of Parke, Davis & Company.

This RCA electron microscope embodies all the many improvements born of more than twenty years' research and manufacturing experience.

Reproduced at the left is a photograph of the deadly polio virus—made visible for the first time with RCA's powerful electron microscope.

Viruses, one of man's deadliest enemies, could never be seen through ordinary microscopes. But with RCA's powerful electron microscope, scientists now can see them, study them, and learn how to fight them.

The electron microscope is *a thousand times more powerful* than ordinary microscopes. It can magnify an object 1,000,000 times. A pencil so magnified would be 119 miles long and 4 miles thick!

Today, this history-making "electronic eye" has a host of vital uses. In addition to its role in medical and scientific research, it has helped to make automobile tires wear longer, synthetic fabrics more durable and metals stronger. In fact, almost every product you buy is better in some way because of the RCA-developed electron super-microscope.

And now, so that many more may share its benefits, RCA has announced a long-term lease plan for its electron microscope. Interested? Write RCA, Industrial Electronic Products Division, Camden, N. J.

RCA skills and ingenuity gave man his first look into the world of the ultra-small. And these same skills assure the dependability of all the RCA Victor black-and-white and color television sets, radios, records and high-fidelity systems that you enjoy in your home.

RCA

The Most Trusted Name in Electronics

grants to help improve India's competence in business management."

Both countries must cope with the problems of a rapidly increasing population that presses upon the food supply. India's problem in this respect is far more acute however. It has produced a race between population and food supply.

Crisis in Food

The country is not growing sufficient food for its existing population much less for the huge increases that are projected. The natural resources are present. They need developing. The Ford Foundation has made a study of the food situation and is giving the government help with agriculture, particularly in teaching new and better farming techniques at the grass roots level. This is difficult because the people on the land are accustomed to traditional, primitive methods of agriculture, are mostly uneducated, therefore slow to take to new ways and lacking in physical strength and energy because of the debilitating effects of generations of undernourishment The Ford Foundation had a team of American agriculture specialists make a three months survey and as a result urged the government to give food production the highest priority. Soil conservation, irrigation, use of chemical fertilizers and improvement in farming techniques were emphasized.

Although this second most populous state is far from being an industrialized country in the same sense that the United States, Britain, West Germany and Japan are, there is nevertheless a surprising variety of production. There is not only light industry such as textiles, but also steel and aluminum production, locomotive works, engineering, shipbuilding, aircraft and automobile assembly, machine tools, oil refining, fertilizer, plastic, rubber and tire manufacture. Aside from textiles its producers find difficulty in trying to sell in world markets because costs are too high.

Although many basic industries are nationalized, the government is giving more and more encouragement to private enterprise, both native and foreign. India's potential productive and consuming capacity is enormous. American business is aware of this and some companies have plants there now and others will install them. To develop industrially to the point where this democracy will be able to provide jobs for its unemployed and semi-employed millions who cannot be taken care of in agriculture, to provide goods for domestic requirements and for export in order to earn foreign exchange to pay for imports and ultimately to become self-sufficient is an enormous task. This task the government tries to solve by a series of so-called five-year plans.

The first three of Nehru's five-year plans, the latest of which is scheduled to begin in 1961, represent an attempt to meet these goals. The investment target of the third plan amounts to almost 21 billion dollars and is more than 50% in excess of that of the first two plans combined. This places an enormous financial strain upon the country, involving estimated expenditures in the year of more than 4 billion dollars, of which only half would be derived from taxation and earnings on government enterprises. The balance would come from internal borrowing, foreign borrowing and advances from the central bank. The latter is inflationary and differs very little from merely printing more money. Estimates place the foreign exchange needs of the third plan at 5½ billion dollars alone.

The gradual shift of emphasis from completely nationalized to some private enterprise and the encouragement given to foreign corporations to establish operations is reassuring. Not only from the point of view of the free world is this so, but also to the domestic business man. It means the government is turning toward the capitalistic system rather than away from it. Besides it means the government recognizes the danger of printing money to meet public sector capital needs with resulting damage to the value of the rupee. Additional weakening of the rupee would injure our business interests as well as the Indian economy.

Capital that is lacking is being supplied by the United States, Britain, Germany, the Soviet Union, World Bank and Export-Import Bank.

The business climate is mixed. Among the adverse factors are the complexity of taxes, the difficulty of obtaining foreign exchange for purchase of raw materials, delay in obtaining necessary government permits and competition from domestic manufacturing interests and nationalized industries. On the plus side are the government's encouragement to foreign investment, and its integrity in meeting its commitments to make foreign exchange available to foreign corporations for the repatriation of income and capital.

There are no reliable estimates of the gross national product, although it is generally believed to be around the 25 billion dollar level. This is extremely small for 400,000,000 people and is evidence of how far India has to go to attain satisfactory economic development.

Language barriers are an important handicap. There are many dialects and even different languages used. Because of intense nationalism and the emotions aroused by generations of colonial rule, the use of English is being discouraged and will decrease. Hindi is the official language and will come into greater use.

Because it is the second most populous country in the world, because it was the first major country to free itself from colonialism and because of the prestige of its leaders and their influence on world opinion and particularly opinions in Asia, what happens in India will have a tremendous influence upon Southeast Asia and Japan. If Indian markets, both import and export, are lost to the West, India is likely to be forced into the communist trade block.

As India goes, so goes Southeast Asia, perhaps even Japan.

LEBANON

From a political standpoint this little democracy has the necessary combustible elements for exploding and only lacks the spark to set it off. It is a potpourri of religious and ethnic factions and is the focal point of

Millions of dollars are pouring into Lebanon (Beirut) for construction as illustrated here; and much of the money reportedly comes from Iraq and Saudi Arabia. The Phoenician International will be one of the most modern hotels in the Middle East. The building boom in Beirut is said to be comparable to Hong Kong's extensive construction program.

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the tensions between the Arab world and Israel, the Soviet Union and our Turkish, Greek and Italian allies, and the communist world and the non-communist elements in the Arab world.

In the economic sense Beirut, the capital of Lebanon, may be termed the Hong Kong of the Near East. For centuries this has been primarily a center of commerce between the western and the eastern worlds and among the peoples on the shores of the Mediterranean Sea. Historically the Lebanese have been interested primarily in commerce, trade and agriculture rather than in industry. They are a nation of middlemen.

Even though imports are three to five times as large as exports, the nation has no balance of payment problem because it receives large revenues from sources we wouldn't think important. These sources are transit duties, resale of goods neither produced or consumed in the country, pipe line fees, international money movements and tourist expenditures. This is an uncertain type of trade economy which could be interrupted by political or monetary disturbances. At times such disturbances have occurred.

The economy, being tied to agriculture and trading, is not too large. Accurate figures on Gross National Product and per capita income are unavailable, but my sources estimated a national income of almost $500,000,000. This amounts to $250 per capita for the 2,000,000 people. Two years ago internal happenings restricted the income but since then there has been steady improvement.

In Beirut there is ample money, mostly from foreign sources. The apartments and offices built within the last ten years and the construction now in progress are astounding. There is a shortage of skilled labor. At the same time unskilled labor goes begging, witness a chronic unemployment of 40,000.

For centuries the people have been trained to purchase and resell for profit. They have been middlemen, buying from the United States, Europe, the Near East—any place they can get goods, and reselling them to the Near East area. Unfortunately for the Lebanese the extreme nationalism in the Arab countries and their hostility to Israel have closed the doors of Iraq, Jordan and Syria to them. They are no longer permitted legally to ship their goods into these countries, partly by reason of commercial rivalry and the desire of these countries to develop their own ports, and partly because of religious and racial dislikes. This is forcing a change in business activity. Perhaps light industry will develop over the next ten years if political events permit.

There are two great obstacles to the development of industry. First, the government has refused to enter into an agreement with us for the guarantee of capital as have India and Turkey. Such an agreement would insure our nationals against expropriation, unconvertibility of local currencies and losses due to war risks. Second is the shortage of skilled, industrious labor. The population, just as the Indian people, have not been trained to work hard at industrial jobs. By nature they are traders, not production workers. Therein lies the problem of their engaging in any kind of manufacturing operations.

In Beirut the ample money supply comes mainly from foreign sources. There are fabulous hotels and apartment buildings whose owners in many instances are Arab shieks with fortunes made in the oil fields. Beirut is not only the site of the American University but also plays host to one of the largest gambling casinos in the world. Construction is still in progress regardless of the shortage of skilled labor. However, this picture of prosperity is marred by the lack of employment for the 40,000 unskilled laborers.

TURKEY

Turkey has reason to be friendly to the West. The Menderes administration wanted close political and economic ties with Europe, even though 97% of her land is in Asia. Whether the new government will have the same attitude toward Western Europe remains to be seen. Turkey is a nation of fearless people as was demonstrated shortly after my departure from the country. When political dissatisfaction arose and rioting resulted, strong military leadership made quick work of the necessary changes.

Not over two years ago Turkey was faced with bankruptcy. It was necessary that she revalue her currency and immediately establish an austerity program as stringent as any in existence today. We came to her assistance with dollars, advice and technical assistance.

The government, since early in the 1950's, has maintained an ambitious development program in many sectors of its economy. As a matter of fact, the desire to accomplish this program led to the financial difficulties behind the bankruptcy. As part of this effort to create something from the natural resources of the nation, the government fostered the capital goods industry, at the same time neglecting the importance of creating industries capable of producing goods for ex-

port. Eventually this imbalance led to the financial embarrassment of 1958.

Business and Resources

A further result of the revaluation episode was the realization by government leaders that they must encourage individual rather than government enterprise and obtain foreign capital.

In spite of an effort to do this, American business interests have been reluctant to enter the Turkish sphere. Even though the government has signed an investment guarantee agreement by which American companies can insure their investments against currency inconvertibility, expropriation and losses due to war damage, not many United States corporations have chosen to establish branches there. This is so because there are other problems involved, namely the difficulty of obtaining Turkish capital for partnership and the numerous requirements for organizing business in the country. Furthermore, the extreme shortage of foreign exchange is so serious that in some instances foreign manufacturers within the country cannot obtain funds to buy raw materials with which to continue production.

Turkey is an agricultural country. Nearly half its national income is derived from farming. Seventy-five percent of its people live in small villages. The mineral resources within the country are numerous but have been developed only partially, again because of the lack of capital and management.

At the present time the country is under strict financial controls. While it has a central bank its financial managers have decreed that loans must be frozen at a maximum figure equivalent to the 1958 level. The population of the country does not have enough surplus income to create savings and thus new capital. Therefore banks find it difficult to attract new deposits. I was told the banks go to great lengths to encourage savings accounts. Banks hold lotteries every two months and give handsome prizes, such as new homes, to savings depositors just to get them to create, maintain or increase accounts with the bank.

Lack of Capital

Reflecting lack of capital, the main source of investment capital has been the government itself. In recent years the government has seen fit to invest its insurance and social security reserves in industry, thus furnishing the capital needed to attract foreign business. The Hilton Hotel in Istanbul was built with social security funds. Conversely the government has found itself inadequate to actually carry on some business and has agreed to step aside to permit foreign management to operate in certain fields. For example, there are numerous oil companies now prospecting or drilling in Turkey as the government has encouraged them to enter the country and assist in establishing the existence of oil reserves so badly needed for domestic fuel and export.

This is a country with a real desire to improve its position domestically and in the world. It could be successful in its efforts given sufficient time. While it has a small population of perhaps 25 million, its people are anxious to learn and do learn quickly. It has a tremendous trade deficit and will need help to overcome it. With a continuation of foreign assistance it could succeed. The former government had demonstrated its integrity by rigidly adhering to its promises regarding the availability of foreign exchange for repatriation of profits and capital investment. It is reasonable to assume the new government will carry on this practice. If given this signal our American businessmen will look to expansion in Turkey if they can be assured of its political stability.

FINALLY . . .

This recent trip gave me an on-the-spot view of the internal pressures and struggles going on in these Eastern countries. A riot scarcely missed by hours brings reality much closer than the headlines in a newspaper. The results of the inter-action of political and economic forces could be disastrous to the free world if we do not provide aid and assistance to these countries. It is within their power to T-I-L-T the scales unless we act immediately. American corporations should continue to expand their foreign manufacturing operations without jeopardizing our domestic activities.

The vast majority of the peoples in the countries I visited lack the educational training needed for employment. The existing poverty and insufficient food supplies create an atmosphere of discontent among the people—the ideal atmosphere for breeding communism.

Thailand, India, Lebanon and Turkey have many common problems. They all need assistance in their industrial development. They not only need foreign aid and investors but they need technical advice in educating the masses. Their people are anxious to learn and to improve their standard of living. India's rapidly increasing population poses the most critical problem. Empty stomachs make unhappy people. Thailand's government is threatened by the peoples' demand for a better life and its ability to make the necessary improvements quickly enough to satisfy them. Lebanon must transform a nation of traders into industrialists and ease the existing tensions with other countries. The new government of Turkey will have to prove its stability in order to attract foreign interests and capital.

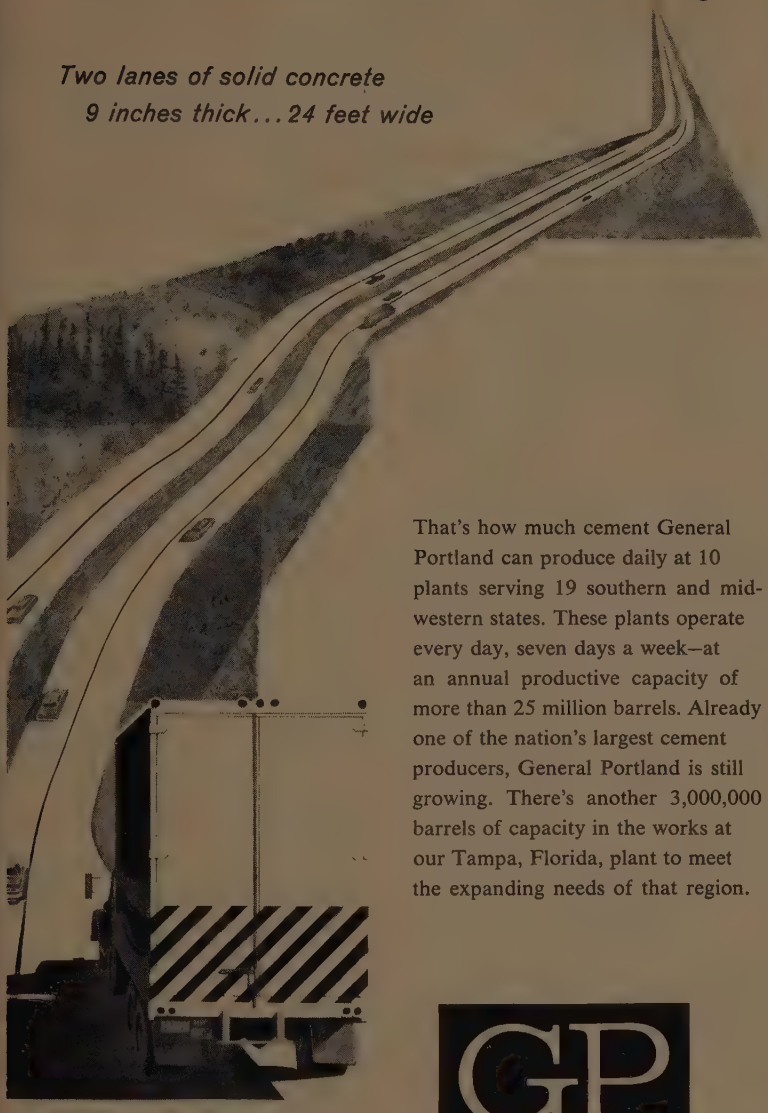
A sharp contrast exists between the countries just mentioned and Japan and Hong Kong. Japan, despite its political problems, has made tremendous economic strides in the past two years. Its continued progress will depend largely on the political stand it takes (neutrality or pro-West) which undoubtedly will effect its present growing importance in the trade world.

Hong Kong, like Japan, has been successful in building its economy and balancing its trade. However, its geographical position places it in the foreboding shadow cast by the Communist Chinese mainland.

The problems confronting all of these countries are challenging. If they are not resolved soon they could become a threat to the free world.

Enough cement every day for 12 miles of superhighway

Two lanes of solid concrete 9 inches thick... 24 feet wide



That's how much cement General Portland can produce daily at 10 plants serving 19 southern and mid-western states. These plants operate every day, seven days a week—at an annual productive capacity of more than 25 million barrels. Already one of the nation's largest cement producers, General Portland is still growing. There's another 3,000,000 barrels of capacity in the works at our Tampa, Florida, plant to meet the expanding needs of that region.

Five brands of MASONRY CEMENT

General Portland's masonry cements possess high workability and structural qualities. They're used for setting concrete block, tile, brick, stone and other construction materials into walls for buildings and various structures. Sold under these five General Portland Brands: *Florida, Signal Mountain, Trinity, Peninsular and Samson.*

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UNITED STATES LINES COMPANY

Common Stock DIVIDEND

The Board of Directors has authorized the payment of a dividend of fifty cents ($.50) per share payable December 9, 1960, to holders of Common Stock of record November 18, 1960.

THOMAS R. CAMPBELL, *Secretary*
One Broadway, New York 4, N. Y.

R. J. Reynolds Tobacco Company

Makers of
Camel, Winston, Salem & Cavalier
cigarettes
Prince Albert, George Washington
Carter Hall
smoking tobacco

QUARTERLY DIVIDEND

A quarterly dividend of 65c per share has been declared on the Common Stock of the Company, payable December 5, 1960 to stockholders of record at the close of business November 15, 1960.

WILLIAM R. LYBROOK,
Secretary

Winston-Salem, N. C.
October 13, 1960

Sixty Consecutive Years of Cash Dividend Payments

GARDNER DENVER

GARDNER-DENVER Since 1859

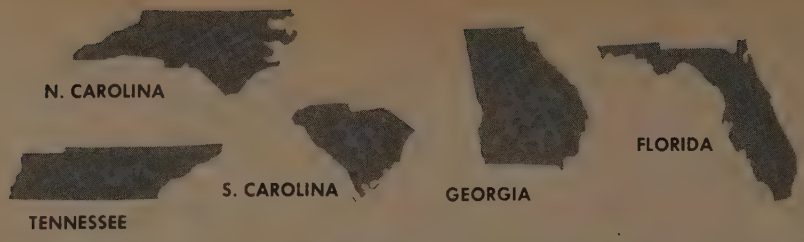
106th CONSECUTIVE DIVIDEND

ON COMMON STOCK

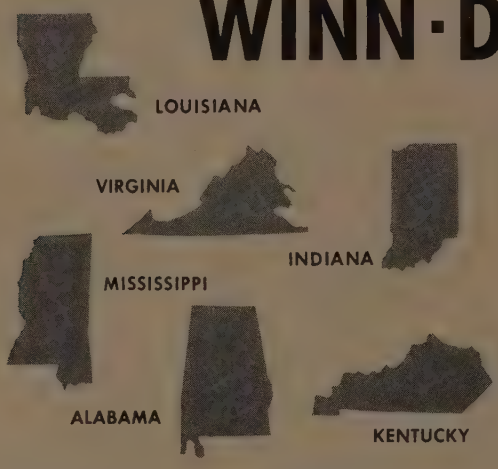
A quarterly dividend of $.50 per share on the common stock of Gardner-Denver Company has been declared by the Board of Directors of the company, payable Dec. 1, 1960, to stockholders of record at the close of business on Nov. 10, 1960.

Quincy, Illinois
Sept. 22, 1960

O. C. Knapheide, Jr.
Secretary



WINN-DIXIE LAND



reports new highs

AT A GLANCE

	FISCAL YEAR June 25, 1960	June 27, 1959
UP! SALES		
Sales	$721,532,377	$666,370,231
Percentage Increase	8.28	13.22
UP! PROFITS		
Net Earnings After Income Taxes	$15,799,687	$14,011,512
Per Share	$2.50	$2.22
Percentage to Sales	2.19	2.10
UP! STORES		
Retail Stores	510	495
Wholesale Units	9	9
UP! DIVIDENDS		
Dividends Paid	$7,577,814	$6,783,701
Per Share	$1.20	$1.08

(Present annual rate 72c after 2-for-1 split)

Copy of Complete Annual Report Available on Request

CURRENT NEWS OF INTEREST

The board of directors of Winn-Dixie Stores, Inc., voted to effect a two-for-one split of its common stock, which action was approved by stockholders at their annual meeting Oct. 7. Outstanding shares will be doubled through issuance on October 28, 1960 of one additional share for each share held of record at October 19, 1960.

Monthly dividends following the split will be payable at the rate of six cents per share. Cash dividends have been paid to Winn-Dixie stockholders for 27 consecutive years and the annual dividend rate has been increased for 17 consecutive years.

Winn-Dixie sales during the 12-week period ended Sept. 17, 1960 totaled $165,922,488 compared with $158,377,848 during the corresponding period of 1959, an increase of $7,584,640 or 4.79 percent. Net earnings after taxes for the 12-week period were $3,473,987, or $0.55 per common share, compared with $0.50 for the corresponding period of the preceding year.

The Fastest Growing Food Chain in the South

WINN-DIXIE STORES, INC.

AND SUBSIDIARIES Operators of Winn-Dixie and Kwik Chek Retail Food Stores in Florida, Georgia, Alabama, Mississippi, Louisiana, South Carolina, North Carolina, Kentucky, Tennessee, Virginia and Indiana. General Offices: Jacksonville, Florida

MARKET TRENDS vs. SECURITY VALUES

by Gerson D. Lublin

OLD AND NEW PHILOSOPHIES OF INVESTING.

The dictionary contains many definitions of what constitutes a "philosophy." But for purposes of this discussion I think that which reads "the study or science of the principles of a particular branch or subject of knowledge," is the most useful one and the one most to the point. The process of making selective judgments in investment (regardless of its manifest lack of the precision to be found in the physical sciences) certainly can be considered today to represent a body of knowledge. The study of this body of knowledge, and its application, are in effect the skills we know today as security analysis, or investment research.

If indeed we are dealing with a body of knowledge, how can we possibly talk of *old* and *new* philosophies? Isn't there one single philosophy, unvarying, unchanging, applicable to this period or that period, regardless of altered conditions? Aren't there certain underlying truths embodied in such a philosophy which are permanent, always applicable and useful? Isn't it just a matter of circumstances changing from time to time, principles never?

This then is the heart of my subject. I hope to be able to suggest that there are, in actuality, a number of hard truths underlying the investment process; and that the changes that take place are in the setting, the climate, the economic atmosphere, rather than the basic principles from which effective investment must stem. And I hope to demonstrate, at the same time, that a sound knowledge of these principles and healthy respect for their *proper* application is the best method thus far devised for successful management of any investment program.

Actually, anyone who speaks of "Investment principles" today is on the defensive. Rarely in the history of the stock market have there been such *apparent* discrepancies among various investment groups as those which exist at this time. Some persons may recall that there was once a price-earnings ratio yardstick: 10 times earnings was the standard against which stock values were tested. Such a concept was, of course, completely unrealistic since inevitably some groups will be properly capitalized at higher ratios than others. But the mere fact of the existence of such a concept—apart from its obvious faultiness—is clear evidence that in the past investors sought for some common standard, one against which they could test their holdings.

Nothing like that, of course, is possible today. Price-earnings ratios may range from well under 10 times earnings, as in the more settled, non-growth groups (for example, the coppers), to 20-25 times earnings for leading chemicals, and all the way up to 40, 50, or 60 times earnings for the most rapidly growing categories, most notable of course being the electronics.

1929: *A Time to Remember*

It may be in order to recite a little history. If I hark back to 1929 it is not to be construed as expressing my feeling that we are faced with another similar disaster. Nothing could be further from the truth since circumstances have changed significantly and I think fundamentally, to the point where any recurrence of the great depression is inconceivable. But even allowing for the lack of a clear parallel, history is often instructive.

My first day in Wall Street was Jan. 2, 1929. Frenzied finance was then the rule with the piling up of shaky financial structures, holding company upon holding company upon a narrow equity base, a rapidly snowballing process. Describing this period someone has said that first the future was discounted, then the millenium, then eternity. The inevitable aftermath, as we all know, completely liquidated the excesses that had grown during the 20's, and in the process struck a blow at the concept of investing from which the markets did not recover for many years. I suppose those of us who lived through 1929 will always carry with us some of the scars of that experience.

If indeed a recurrence of 1929 and its aftermath is unthinkable, why hark back to this period? I think that it is instructive for several reasons. We tend to think of 1929 as a year of unbridled excess and of 1932 as one of economic disaster, as indeed they were. In thinking back to this period we tend to emphasize the extreme character of the swings to which both business and the stock market were then subject. And at the same time we tend to forget that business cycles and market cycles are inherent in our economic system. It is not that 1929-19332 need not have occurred at all; rather that the extremities to which both the upswing and the downswing were carried were entirely unnecessary. But cyclical movements are in the very nature of things—and must be expected in the future, as in the past —within reasonable and endurable limits.

Certainly the stock market went to excess in the late 20's. But had it not been for thin margins and the piling up of credit upon credit, plus security manipulation of a type which has since been outlawed,

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Gerson D. Lublin, a partner of H. Hentz & Co., is a graduate of Yale University and has spent his entire business life in Wall Street, with the exception of the World War II years 1942-46. *During those four years Mr. Lublin served with the War Department Price Adjustment Board handling contract renegotiations of many of the country's largest corporations.*

there is little reason to doubt that the upswing would have been more gradual and more protracted and the downswing in the economy much better cushioned and much less damaging. As I see it, what happened in the late 20's and early 30's was a familiar form of business cycle which was permitted (and in fact even encouraged) to go to unfamiliarly excessive lengths.

Let us make a quick transition now to the post-World War II era. Following modest and sporadic economic improvement in the 30's, the war came along and unemployment, as well as excess plant capacity, became a thing of the past. Then followed a post-war period which, as it rapidly developed, truly took on the aspects of a "new industrial era"—with emphasis on business rather than the market—which had been so widely predicted in the 20's. True it had its cross-currents and its interruptions. For several years, immediately after the last war, the market was down and quiet. The upswing which started in 1949 was interrupted in 1953 and again in 1957. The market reactions which occurred, although now appearing relatively moderate on the charts, were certainly disturbing enough to those who carried stocks through them. But there is no doubt that it has been largely a one-way street. For some 10 years now common stocks have been in the main in a rising trend; and the *economy's* general advance has actually been sustained, with only moderate interruption, since 1946.

Needed: A Two-Fold Philosophy

Clearly we are confronted with two different kinds, two different sets of facts. There is no apparent parallel to be found between the course of investment and business developments during the 15 years prior to the war, and the 15 years following the war. Can, under the circumstance, any philosophy be found which explains the two periods; and what is more important still, can such a philosophy be one which serves as an effective guidepost to present specific market policy and future prospects?

The business cycle process has been described too often to warrant retelling the story here in any detail. Insofar as the stock market is concerned, irregularity of movement seems to reflect causes which inevitably recur, over the years, causes whose sources are to be found as much in human personality, human weakness, as in the tangibles of corporate earnings, dividends and prospects. In an upswing, generally starting from a base which represents a realistic evaluation of securities, markets tend to rise more rapidly than do earnings and dividends for reasons that are primarily psychological, deeply embedded within the average investor. Optimism feeds upon itself. Imperceptibly, step by step, it is found that value yardsticks have loosened, standards have been relaxed. As business moves forward, a stock evaluation of 10, 12, or 15 times earnings may, after a few years, rise to 20, 25, 30 times, even higher. And these higher ratios are now related to the expanded earnings which have come from a business boom. Hope—one of the great movers of the market, the other being fear—takes over, at the expense of logic, judgment and sometimes just plain common sense.

However, that isn't the way it looks at the time. What happens during this process is that a whole series of new rationales are developed to provide the necessary justification for the things that people are doing out of emotion. The "new era" concept was a crude example of what I have been talking about. Today there are new magic words: "growth," "electronics," "outer space." They come from a deep sense on the part of most of us—certainly one which is well justified—that we are truly living in a revolutionary age of scientific discovery and economic expansion, one whose boundaries extend far beyond the horizon. Even the older investor, trained in a more prosaic school, recognizes that significant new prospects have opened up, creating a broad range of new opportunities.

Here it is very easy to cross a rather narrow line and to take a step which brings one out of the field of investment calculation into that of pure unadulterated speculation—or if you will, just plain gambling. The average investor has seen many stocks multiply in price in a few years, going from starting price-earnings ratios, which may already have become liberal, to ratios which can only be justified (if indeed that is possible at all) by compounding a recent earnings trend as though it will inevitably recur in the next five years. He no longer concerns himself with value but with names of companies, mystical products of unknown application, and so forth.

And considering the world we live in, it is not possible to blame the average investor. Who is there truly in a position to effectively appraise our "brave new world?" Much of the scientific work which is being done is classified under strict security regulations since it is involved in the national defense. Much of what is being done requires, at a minimum, an engineering degree if one is merely to understand how it works; while to appraise its future potential, even in terms of business application or for military purposes or for space exploration, is beyond the capabilities of anyone but the specialist. And, furthermore, such a specialist must be a new type, one quite different from Wall Street's familiar "Security Analyst."

New Opportunities, New Risks

There is no doubt that the current scientific revolution is creating new investment opportunities at a remarkable rate. There is no doubt also that a number of companies already in the forefront of our scientific explosion will continue to make dramatic progress in the years ahead. On the other hand there will inevitably be many casualties as in the past. Based on experience, the casualties will far outnumber the successes. The investment climate of recent years has made it increasingly difficult for investors to select the possible winners from the assuredly large number of losers who will fall behind. And even some of the winners at times may go up into the stratosphere, and their shares sell at

prices which represent significant risk, one not worth taking.

It might not be inappropriate to recall that the post-war era has seen many groups skyrocket and then when all appeared assured, fade badly in the stretch. We have almost forgotten the television boom of the early 1950's when *all* stocks identified with the industry ran wild. The uranium boom also comes to mind; it was just when the future of this industry appeared most assured, and when the leading companies had established their reserve positions, were getting rapidly into production and about to show significant earnings, that a market reversal took place in the group and its long downswing got underway. More recently wonder drugs of various kinds sent drug shares skyrocketing; but now the inevitable forces of competition, plus the threats implicit in a close governmental scrutiny of profits, have taken the bloom off that rose as well. It does seem to be inevitable in investment affairs—as in so many aspects of life—that the time to be most cautious is when things look most promising. There is no reason to think that this rule, so well tested over the years, is less applicable than in the past, to many of the glamour stocks of today's market.

Well, perhaps it would appear that we have departed some distance from the search for philosophies old and new, and our quest for a common philosophy. I think not. In my opinion there have been established over the years certain investment principles which attack the problem of "value." Value is a most intangible thing as those of us who deal with security values, changing daily, know full well. Value standards must change as times change. But the basic principles by which the analysis of value is approached, the question of earnings and earnings trends, of dividends, of profit margins, of competition, of type of product—above all of price—of the price that must be paid for the security in question, these principles I believe will stand up in the future as in the past. A healthy respect for the value concept may not be the

one way of making a large fortune on small capital in short order. But it will, I contend, serve the average investor's purpose more usefully than any other, in that it permits the protection of capital to accompany its sustained growth, at a reasonable rate over a period of time.

I mentioned before that an over-discounting of the future—through the process of steadily lengthening out price-earnings ratios—has inevitable limits; and I have suggested that even an industry with an extraordinary growth trend may see its securities, on occasion, manifestly over-priced in the market. It is also possible for an industry's profits to rise in an exaggerated way during an early growth phase. When an industry is in an early stage of its growth, with demand for its products exceeding supply, profit margins tend to widen beyond levels which can be sustained under more normal competitive conditions. I don't doubt that that has occurred for a number of the "glamour girls" of this electronic age. Putting it another way, there are, without much doubt, favored companies today selling at abnormally high price-earnings ratios based on earnings which themselves are abnormally high in relation to the amount of business being handled. This obviously involves a compounding of the element of risk, regardless of the company's own merits as a company.

One final word which I hope is not misconstrued. There are times when emphasis on value points logically to stock purchase in a favorable market, that is, a market favorable to the buyer or a market which is down. This is the aggressive approach, whose objective is profits. But there are also times when emphasis on value is a precaution which, properly applied, prevents serious damage in the event of a change in market conditions; this is the case when the market is buoyant, exuberant, and after a major advance. Such a negative approach may be invaluable as a means of protecting capital.

To summarize, as I see it, the value concept has been thoroughly tested, and has not been found wanting over some generations of investing; it has well stood the test of time.

Secondly, markets generally have a tendency to go to extremes and in the process create discrepancies between price and value—discrepancies in many individual issues and for whole groups.

It is therefore essential, and just plain common sense, for the investor to keep his eye on value regardless of the particular market climate. This will, if nothing else, make it possible for him to avoid being carried away by the excesses of optimism and pessimism which generally accompany significant market movements.

A proper emphasis on the concept of value will, I submit, make possible effective results, not in just one year or two years, but throughout a lifetime of investing.

Letters

Our 'Pleasing Formula'

Editor:

In reading your editorial in the September-October issue of The Financial Analysts Journal we were pleased to note your very kind references to Allied's publication of its lectures on the chemical industry presented before The New York Society of Security Analysts last year.

Your comments and the excellent cooperation of your Reader's Service in handling the requests for the booklet are very much appreciated by all of us here at Allied.

Kerby H. Fisk, Chairman
Allied Chemical Corp.
New York, N. Y.

* * *

Aid to Financial Study

Editor:

I have had the pleasure of recently reading two of the more recent issues of your publication The Financial Analysts Journal, and found them not only interesting but also very informative. I am a student in Business Administration at the University of New Brunswick and I am very interested in publications concerning the financial world.

Ian M. McAvity
University of New Brunswick
Canada

* * *

Mahalo Nui Loa

(Thanks very much)

Editor:

I was introduced to The Financial Analysts Journal while in Hawaii this summer visiting my parents and attending the University of Hawaii. A good friend of my parents, Keith Wallace, a subscriber of yours, let me borrow a couple of his issues. He advised me to subscribe to your magazine as it is a very good publication about the business world and would be of great value to me. I am a Junior in Business Administration at the University of Washington.

Jack C. Julich
529 36 Ave. N.E.
Seattle 2, Wash.

* * *

'Opportunities Unlimited'

Editor:

I thoroughly enjoyed Fulton Boyd's article, "Investment Opportunities in Latin America," in the September-October issue. The creation of equity markets in Latin America has been a slow process but is now beginning to accelerate. More and more U. S. companies are finding it convenient and profitable to share ownership with local investors through public offerings of securities.

It is inevitable that the investing public in this country will also discover the opportunities inherent in those developing economies. For those with courage and foresight, the rewards can be great in the years ahead. Let me take this opportunity to thank you for your kind permission to duplicate and distribute the article to our stockholders and friends.

Van Dyne McCutcheon
The Deltec Corp.
New York, N. Y.

* * *

Lecture Series Praised

Editor:

Let me congratulate the Bank of New York and the Pacific Finance Corporation for their outstanding lecture series on sales and consumer finance companies recently presented for The New York Society of Security Analysts. I had the pleasure of attending this series and have just received the book containing the lectures.

David F. Douglass
Investment Department
Home Insurance Co.

FIFTEEN YEARS AGO IN THE JOURNAL

Long and detailed observation of the market in its response to news will convince us how much wiser the market as a whole usually is, in its responses to the news, than the average participant in the market. For the market, whatever the development it is trying to discount, always includes among its members some investors who are experts in the particular subject at issue (steel, gold, oil, and so on). To the outsider, the strength or weakness of a stock may seem wholly inexplicable until months later.

It must be remembered that financial developments, as they become news, represent a late stage of the unfolding of constantly flowing economic processes. Before some stage of the process emerges as news many people can foresee the changes in sales, earnings, dividends, new products, and so forth. Therefore those who act on the news may be latecomers to the feast.

What the news is may be of less importance than how the market responds to it. News flowing with the trend presents no problem. It becomes deceptive when it reaches a turning point and when it runs against the trend.

These warnings about news seem pertinent:

1. Beware of magnifying the news. Set it in the total picture.

2. Beware of attributing too much causal effect to news.

3. Beware of granting any statement authority just because it appears in print.

These questions, applied to news developments, can yield helpful answers:

1. Has similar news produced uniform market effects in the past?

2. How long has the present trend of good or bad news been in force?

3. How effectively is the market exploiting items of good and bad news?

4. Could it have been foreseen and discounted or is it undiscountable news?

—Joseph Mindell
Marcus & Co.

'What's My Line?'

When Publisher Bennett Cerf recently introduced Moderator John Charles Daly on the TV show "What's My Line?", the bookman observed that Mr. Daly "is as omniscient as a Wall Street Security Analyst."

PUGET POWER . . . 1960 GROWTH REPORT

POPULATION GROWS 60% IN TEN YEARS. Two-thirds of the *entire* population growth in the state of Washington during the past 10 years has taken place in Puget's service area. Pictured above is a portion of one of the new suburban residential developments east of Seattle served by Puget Power.

NEW INDUSTRIAL PARK DEVELOPED BY PUGET. Early this year, Puget Power, through its newly formed Puget Western, Inc., subsidiary, acquired Andover Industrial Park south of Seattle. This 325 acre development will accommodate 40 to 50 light manufacturing plants. First tenant (now building) is General Electric Company.

RESIDENTIAL USAGE GROWS. Last year Puget's domestic customers used an average of 769 kilowatt-hours more electricity than they did in 1958. This is the largest residential usage increase among all investor-owned electric utilities in the nation. 84% of our homes have both electric ranges and water heaters; 8% have electric heat. Our aggressive and selective load-building programs keep increasing per-customer usage of electricity in our service area.

INDUSTRIAL USAGE OF ELECTRICITY GROWS 66% IN FIVE YEARS. This has resulted from both new industry locating in our service area and the expansion of dozens of established plants. Largest is the Boeing Airplane Transport Division—employing 18,000—which manufactures the famous 707 and 720 commercial jet transports and KC-135 military jet tankers at Renton, Washington.

RESIDENTIAL USAGE MORE THAN TWICE THE NATIONAL AVERAGE

PUGET SOUND POWER & LIGHT CO.
1400 Washington Building • Seattle

PUGET POWER

Stock Prices—Selectivity and Breadth

by R. W. Storer

ONE PURPOSE OF THIS INQUIRY is to explore the degree to which stock prices tend to move up or down together, and from the results to evaluate two often-repeated statements: (1) that such a substantial minority of issues is usually moving in a direction contrary to that of the stock price averages that, given a sufficiently intelligent degree of selectivity ("Ay there's the rub"), the investor-speculator should ignore the movements of the averages; and (2) that over a period of years this heterogeneity of action has increased to an extent which, if true, would increasingly validate statement (1) as a sound basis for investment policy.

The second purpose is to apply the findings of the inquiry as a conceptual footnote to the use of market breadth as an aid to forecasting turning-points in the stock price averages, a method originally developed in the mid-1920's by the late Col. Leonard P. Ayres and his assistant, James F. Hughes, and since then refined and continuously applied by the latter.*

The stock price "averages" most widely used tend, implicitly or explicitly, to weight heavily either high-prived stocks or stock issues having a particularly high aggregate market value. This is logical for many of the purposes for which such stock price indexes are used. But to the extent that the corporate fortunes of these companies may develop in a manner different from those of smaller companies, or to the extent that investors-speculators may be attracted differentially as between the kinds of stocks heavily represented in the averages and those excluded or lightly weighted, we have a situation where the "averages" will tend to behave in a manner unrepresentative of the remaining stock issues. Indeed, the blue chips and other high-unit-price issues achieved their distinction initially by a degree of corporate success which differentiated them from other, less successful companies and their stocks.

We lack a stock price index that would afford a more adequate measure of the movement of non-blue-chip stocks. An index composed of a mean of the *percentage* price changes of all common stocks, after adjustments for stock splits and stock dividends, would do so more successfully than the more popular indexes presently available. The expense of doing this retroactively for an adequately long period would be great, although less than in pre-electronic-computer days.

But lacking this more refined analytic tool, we can use what James F. Hughes and others term "breadth," and Hamilton Bolton the ADL (advance-decline line) meaning any simple representation—usually cumulated—of the percentage or number of stocks rising relative to those declining (and optionally, those unchanged).

This yardstick involves at least two limitations. The readily available daily data are not limited to common stocks alone but include all stocks trading on the New York Stock Exchange, including a considerable minority—up to some 500—*preferred* stocks, whose actions in some cases tend to be contrary to those of common stocks. It should be understood that while this is a limitation on the precision of breadth as a measuring device for common stock price movements, it may well be a positive advantage for the *forecasting* role of breadth, discussed later herein.

Breadth Measurements

Secondly, breadth measurements necessarily substitute the numbers or percentages of stocks rising or falling, for the unknown data concerning the typical or average amount or percentage of each issue's rise or fall. Given a universe of some 1,500 issues, with the observed dispersion of action, *both* as to direction *and* amount of movement, and, finally, with cumulative data, the assumption may well be valid that breadth acceptably measures the price action of the market as a whole. It is possible that it does so better than do the principal averages, but the composite that it measures does include a substantial minority of preferred issues not necessarily responsive in the same direction to factors that affect common equities.

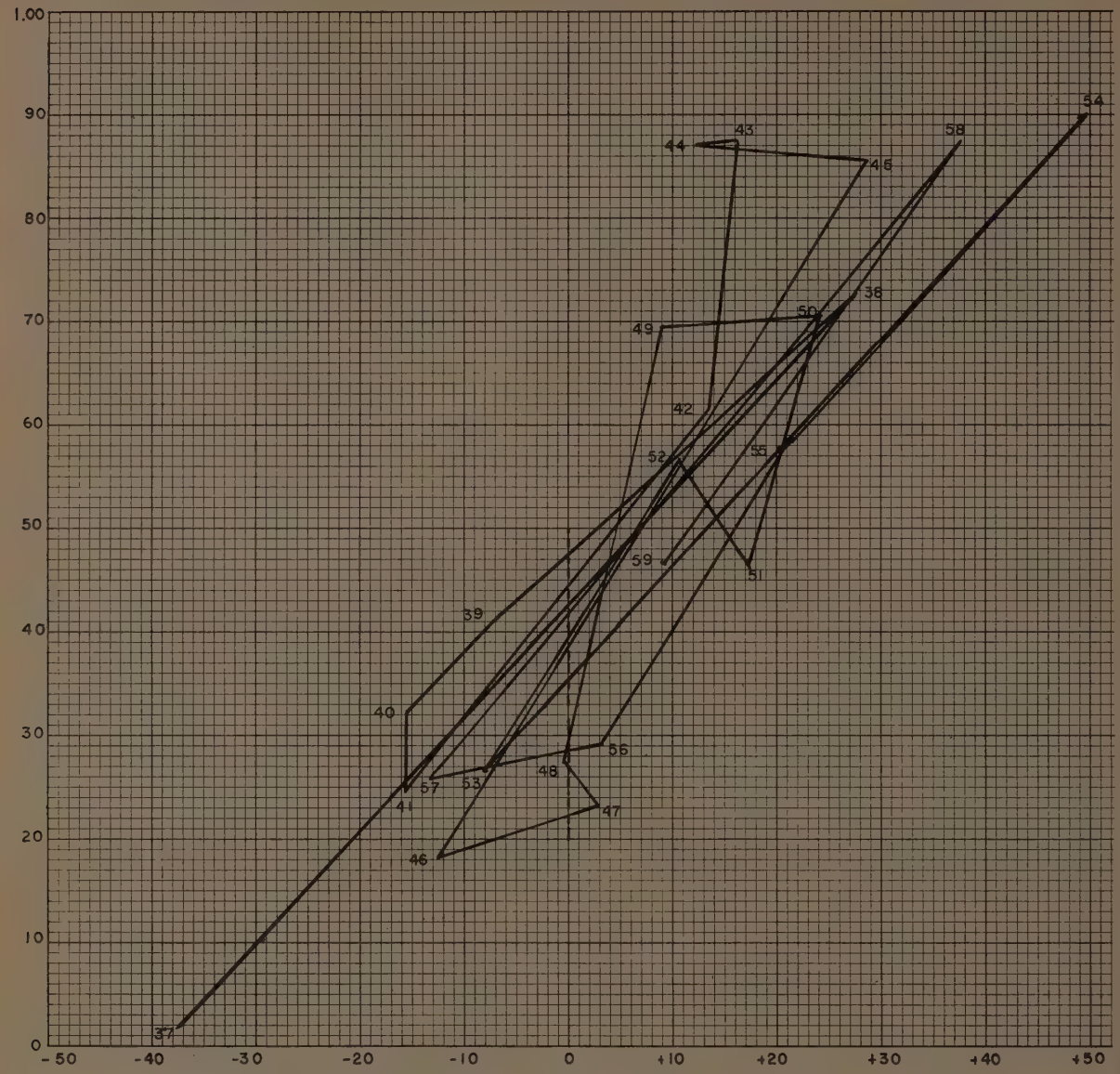
The stage having been set, we introduce the players. *The values of Y* on the accompanying chart are one measure of breadth, namely the percentage of NYSE listed stock issues which rose from one year-end since 1937 to the next, out of the total number which rose, fell or remained unchanged in price. *The values of X* are the percentage change, also year-end to year-end, in the Standard & Poor's 425 Industrial stocks. Each year on the chart has a value in Y and in X, and the consecutive dots showing these are connected by lines. The resulting graphic formation thus shows the degree to which larger or smaller rising percentages of all listed stocks have been accompanied simultaneously by larger or smaller percentage gains in one of the two most widely known industrial common stock price indexes.

It might have been expected that the major axis of the formation would more closely approach than it does a center of symmetry at the point Y = 50% X = 0%; i.e., where half of the listed stocks would be rising, half declining, and where no change would be occurring in

*The Birth of the Climax-Breadth Method by James F. Hughes, The Analysts Journal, 3rd Quarter 1951, page 3.

Robert W. Storer is vice president of Manufacturers National Bank of Detroit, and is engaged in bank and trust investment research.

Ratio of Number of Stocks Rising to Total Number of Stocks Rising, Declining and Unchanged—NYSE



Percent Change in Standard & Poor's 425 Industrials, Closing Prices, Year-End to Year-End

in the level of the S. & P. 425 industrials. The chart would more closely approach this situation if we should omit the number of stocks remaining unchanged, and use the ratio of stocks rising to total stocks falling, but this still would not—for some unidentified reason—bring the major axis of the formation through this center of symmetry.

Obviously those who have emphasized selectivity are justified in their views to the extent that there is always a large and variable minority, if not a majority, of stocks running counter to the direction of year-end to year-end change as measured by the S & P Industrials. At the zero change line of the latter—marked by a dashed vertical line on the chart—there are extreme divergences in the lines of year-to-year changes corresponding to proportions of stocks rising from only 22% to 48%, a spread of 26 percentage points. There have been years when the S & P Industrials rose some 20%, but when some 40% of all listed stocks either declined or remained unchanged. No wonder that some individual lists of stock holdings include very largely issues that moved contrary to the averages!

Having thus found evidence strongly confirming what many persons have believed concerning selectivity in

"a market for stocks instead of a stock market," we move on to the closely related popular statement that this selectivity has been increasing over the years, thus, by implication, diminishing the need to guide investment or speculative policy by prospects for the "averages" or any other central tendency of the market.

Over the past 22 years, at least, such a tendency is not apparent from the chart. The statement above would receive confirmation if we found in the chart any systematic tendency for the dots representing successive years, to migrate in either or both directions *away* from the major axis of the formation of dots and their connecting lines; i.e., towards the upper left and/or lower right quadrants. This would be the graphic representation of an increase in the non-conformist or super-selective action of many industrial stock issues relative to their aggregate action as depicted by the behavior of the S. & P. Industrial index. But in fact we find no such action. Changes from year to year there are, to be sure, often across the regression line, and constituting rather anomalous action by many individual stock issues—some of them, as we shall see, preferred stocks. But there is no perceptible trend towards a wider dispersion of the dots over time, in either direction or in both directions. Most of the widest excursions were in the years 1943 to 1947—mostly wartime. Hence, whatever evidence this affords calls for no revision of one's convictions concerning the proper relative emphasis to be laid on the market as a whole and on the selection of individual issues, or on diversification, for that matter.

Forecasting Significance

We turn now to quite another aspect of this matter of co-variance between stock prices and stock price indexes; the forecasting significance of divergent action between them. Most treatment of this subject—much of it by James F. Hughes†—has involved the use of line charts showing a stock price index (usually the Dow-Jones Industrials) and some index of breadth. Very broadly speaking, a devergence between the lines extending—with daily data—over some weeks, has been identified as partial evidence of an approaching reversal of the stock index trend line. The divergence has been defined—implicitly, at least—as one line rising and one falling, that is, an absolute and positive divergence.

The chart herewith (which we analyzed earlier) is perhaps not an obvious way to present such divergences. And annual data are, of course, hardly the appropriate time-scale with which to approach market price cycles which are incorrigible about ignoring man's calendar divisions. Nonetheless, even with this arbitrary and relatively enormous time-scale, we find some suggestive relationships visible from the chart. One way in which the general, broad theory of forecasting from this relationship might express itself in this chart is: When the percentage of stocks rising is abnormally small, relative to the rate at which the S. & P. Industrial index has been rising, the latter is more likely to fall thereafter than to continue its rise. The converse would also be indicated. In terms of the graphic relationships in our chart, this means that dots which are far *below* the formation and its regression line or main axis, should constitute warning of a possible impending reversal of the accompanying stock price rise. Conversely, dots which are abnormally far *above* the formation, thus recording a high percentage of stocks rising, relative to the action of the stock price average, at a time when the latter had been declining, would constitute a warning of an impending reversal to an *uptrend* in the stock price index.

This type of chart thus permits perhaps more readily than the more usual line chart, the presentation and observance of *relative* devergence, as well as *absolute* or *positive* divergence. That is, for example, of cases where the stock price index is rising, but at a rapid rate compared with a very slender margin of excess of stocks rising over those declining and unchanged, and conversely. It is quite suggestive and probably significant that the anomalies which the theory calls for as likely to appear are in fact evident on our chart. The historically important low point of 1942 is clearly on the "undervalued side" of the regression line.

After the turn, the rising markets of 1943, 1944 and 1945 were even further away from that line, for reasons that are not apparent to the writer—except possibly that in wartime the risk of failure is abnormally low for corporations large enough to have stock listed on the NYSE. By the end of 1946, the number of stocks rising was abnormally low, relative to the year-to-year decline in the stock price index, and we thus have the reverse of the situation of the previous four years. In 1947 and 1948—the latter marked by a significant decline and both together constituting part of a 3-year extended trading range—we have no suggestion from the above relationships of an impending stock price rise. But this shows up prominently in 1949, when an historic turning-point comparable with that of 1942 was reached. The year-end-year-to-year-end data distort the relationships to an unknown extent, but even so, these are sufficiently evident as to suggest further investigation with daily, weekly, or even monthly data.

As to more recent minor cycles, we find 1956 at the year-end reflecting an unfavorable price-breadth relationship. The 1957 year-end situation, following a decline, is quite close to the indicated center line of the formation, but certainly did not explicitly point to the reversal which was to follow.

The 1959 year-end orientation—taken, of course in relation to the preceding year—displays no particular abnormality, relative either to 1958 or to the major axis of the historical structure. It is interesting, however, that an intervening reading, to Sept. 30. 1959, some two months after the highest point yet reached by the S. & P. index, recorded one of the strongest divergences ever shown by this record, suggesting overvaluation of stocks. *(Continued next page)*

†The Birth of the Climax-Breadth Method by James F. Hughes, The Analysts Journal, Third Quarter, 1951.

Why Is This So?

If the foregoing rough indications are borne out by further studies over shorter time-intervals, one is prompted to ask *why* this should be so. There are several possible alternative explanations and combinations of explanations.

1. If one believes, as does the writer, that a flow of funds into or out of the stock market occurs, and is ultimately reflected in the stock price indexes, part of the scanty quantitative evidence of this flow is to be sought in the movement of prices of the market as a whole, (as well as in the trend of the daily *trading volume*) and the market as a whole may be reflected more faithfully in the breadth, (advance-decline line) than by the movement of the stock price indexes, heavily-weighted as these are by ("permanently"-held?) blue chips.

2. This line of explanation can be related to the relationship between low-priced stocks and high-grade stocks, two of the sub-indexes of Standard & Poor's. The ratio bteween them we have previously used as a thermometer, because it displayed some cyclically recurrent buy-indication and sell-indication signal levels for the S. & P. 425 Industrials. Also, and more relevant to the subject of this paper, the ratio has displayed leading characteristics at peaks but not at troughs of the stock price index. It seems quite possible that these phenomena are related to the price-breadth relationships analyzed herein and elsewhere.

3. But at best these afford only a proximate explanation, not an ultimate one. We need to know what characteristics either of the companies and their stocks, or of the buyers and sellers of them, and the motivations of those persons, occasion this apparent differential behavior. It is, of course, quite possible that stocks of lower-priced and perhaps more nearly marginal companies will turn in advance of the market as a whole. But if this is true, is it because of the characteristics of the low-priced stocks or is it because those who buy them early are either more venturesome or more far-sighted and more flexible in their willingness to act in a minority, than those whose actions will subsequently cause the blue chips and the stock price averages to follow suit?

4. The explanation must deal with the fact that price-breadth divergences occur prior to both market peaks and bottoms. This fact complicates the task. For example, it renders less credible for example, the hypothesis that relatively permanent institutional investing in blue chip stocks has increasingly dominated average price levels in recent years.

The tendency—expounded by Garfield Drew—for the feelings and actions of odd-lot traders to be out of phase with the movements of the stock price index, may fit into the explanation. We suspect (though we cannot prove) that odd-lot traders will be more prone to deal in standard-price, rather than low-priced, stocks. For if they dealt in the latter, they would be better able to afford to buy and sell round lots.

5. Finally, the preferred stocks listed on the NYSE may constitute a clue to the pattern described herein. The tighter money and higher yields on fixed-income securities, which exercise a growing deterrence to rising common stock prices, exert a similar effect even earlier on bonds and money-grade preferred stocks. In fact, the ratio of yields on high grade preferred stocks to yields on common stocks is a rather good measure of over-or under-valuation of common stocks. By reaching recurrent high or low levels, this ratio has given timely warning of an impending reversal in common stock prices. Evidence of this kind is given by Chart 131 of F. I. duPont & Company's Graphic Presentation for 1959. The possibility that contra-action by common and preferred stocks may account for divergence between breadth and "the averages" is rendered less persuasive by the fact that abnormalities in the ratio between preferred and common yields have often come about less from contra-action of their respective yields—and hence, prices—than from movements in the same direction, but at different rates. Moreover the yield divergencies have usually been very slow and protracted.

We have investigated, however, whether actual changes in preferred stock prices have moved counter to those of common stocks as to have significantly altered the breadth readings of *all* listed stocks, in relation to the movement of the *common* stock price indexes. The importance of this factor can be demonstrated by counting the year-to-year changes in the preferred stocks quoted on the NYSE, deducting them from the results for *all* stocks, thus deriving the changes in common stock alone, to the future action of which we are seeking a clue. The following table does this for the changes in 1959:

New York Stock Exchange
Direction of Price Changes—1959

	Rising	%	Falling	%	No Change	%
All Stocks	700	46.24	737	48.68	77	5.08
Less Preferreds Only	91	22.30	291	71.32	26	6.37
Equals Commons Only	609	55.06	446	40.33	51	4.61

The inverse relationship which is to be expected between common and preferred stock price action under the conditions of 1959 is apparent. While 46.24% of *all* stocks rose, only 22.3% of *preferreds* did so. Subtracting the preferreds from the total gives the behavior of the *common stocks* alone, and of these 55.06% rose. For a net percentage rise in the S. & P. index of 9.38% for the year, the action of the common stocks alone is about as close to the main axis of the chart formation as it is possible to get; significantly closer than for *all* stocks at 46.24%. The preferred stocks, numbering over 400, are a sufficiently large proportion of the total (about 1500) that the inverse action to be expected of them under conditions prior to or at turning-points, can rather powerfully affect the market's breadth, and thus serve as a leading indicator.

This sequence could logically take place prior to both

market peaks and troughs, since money-rate securities have a margin of safety that does not involve their purchase or sale in the same kind of confidence as that pertaining to common stock transactions. Money tightens long before common stock prices reach their peak and eases long before they reach their trough.

It may well be that the above sequences and explanations operate in addition to and not all in place of, the more usual explanation that an abnormal proportion of common stock issues not included, or not weighted heavily in the stock price averages, is moving contrary to the averages, prior to a reversal in the latter. One supposes that such an empirical process gains no particular utility through explanation, but it would be more satisfying to have one.

Corporate Investment Image To Be Surveyed by Experts

Planning is underway for Opinion Research Corporation's second biennial study of the investment image of leading corporations. The study will assess how effectively companies communicate with Financial Analysts and, where indicated, recommend changes in approach.

In addition, it will provide major companies with an assessment of how they and their competitors are viewed in the financial community. It also will measure changes in investment images since the first ORC study in this field was conducted in 1958.

This second investment image study is being undertaken in response to requests from companies which see it as a means of assisting them to strengthen their relationships with the financial community. The research will begin this winter with interviewing scheduled for December and January. Plans call for the participation of more than 850 Financial Analysts with banks, brokerage houses and investment companies situated in the following financial centers:

New York, Boston, Chicago, Philadelphia, San Francisco, Los Angeles, Detroit, St. Louis, Cleveland, Providence, Richmond, Rochester, Kansas City, Minneapolis-St. Paul, Omaha, Dallas and Houston.

Appraisals will be made of companies in some 17 industries, including aircraft, auto supply, banks, building materials, chemicals, communications, electric equipment, electronics, electric utilities, foods, natural gas, nonferrous metals, paper, petroleum, pharmaceuticals, railroads, rubber, and steel.

The research plan calls for an appraisal of each company by 50 Analysts who specialize in its industry, with detailed assessments to be provided in five areas.

Company Image: Analysts will be asked to appraise individual companies in terms of their management, operating facilities, organization, financial operations, products, research, marketing, labor relations and leadership position in their industry. In assessing the management of a company in the first study, for example, analysts considered whether a management was far-sighted in its planning, whether it was profit-minded, modern and up-to-date, or behind the times, and whether it was thin at the top.

In the product and research categories Analysts were asked to measure companies in terms of whether they had quality products and services, were outstanding in new product development, were well diversified, or overly diversified, how profitably they used their research and whether they undertook enough research.

Information Flow: A detailed analysis will be made of the kind and amount of information available to Analysts and the sources of this information.

Current Investment Appeal: Each company will be compared with other firms in its industry and each industry will be compared with other industries.

Industry Image: Plans call for an appraisal of the problems, opportunities and long-term potential of 17 industries.

Trends: Data gathered on 168 companies in the first study will be compared with current findings in a detailed analysis of change over the past two years in company image, industry image, investment appeal and information flow.

The study will be under the direction of Henry W. Wolpert, ORC research director. Dr. Wolpert received his Ph.D. degree in psychology from the University of Munich and in 1952 joined the Opinion Research Corporation staff. His fields of concentration are investor relations, communications and foreign research.

ORC which was founded in 1938, specializes in studies to help management make decisions and solve problems. The company's principal fields of research activity are investor relations, marketing and distribution, consumer opinion and motivation, product development, public relations, communications and employee and community relations.

On a recent day, for example, ORC specialists were analyzing the corporate images of several major firms, studying what a change in brand identification would do for a food processor, measuring reaction to a TV program, interviewing a company's engineers to find out how to improve their performance and assessing the effectiveness of the language management uses in communicating with employees.

In all ORC has more than 175 clients, including companies, associations and other groups. With the support of many of the country's leading corporations, ORC conducts the Public Opinion Index for Industry, a continuing research program for management.

The investment image studies are undertaken as part of the Index research program. Other Index reports have explored areas such as inflation, cost cutting, productivity, employee publications, recruiting and development of personnel, the political climate for business, unionism, annual reports and reactions in foreign markets to American firms and brands.

ORC has in Princeton a staff of more than 100 persons, including psychologists, sociologists, statisticians, economists and experts in business administration. It also maintains complete coding, statistical, tabulating, interviewing, printing and art departments.

TITAN—*50 miles up: Official USAF Photo*

Air Force-Martin Titan, *giant American ICBM, has been chosen for a key role in space exploration. One of its first missions will be to launch USAF Dyna-Soar — manned aerospace craft.*

MARTIN

History Is Still an Orderly Process

. . . . despite Technological Nuclear Developments

by Philipp H. Lohman

PROFESSOR DANIEL BELL, a sociologist at Columbia University, writes in *The End of Ideology* that "few serious minds believe any longer that one can set down 'blue prints' and through 'social engineering' bring about a new utopia of social harmony. . . ." He adds: "In that sense the ideological age has ended."

Adlai Stevenson says that "the engine of social progress seems to have run out of fuel: the fuel of discontent."

A dean at Yale University said last June, speaking of the graduating class of 1960, that "this is a waiting generation. They oppose all orthodoxies. They know what they're against but not what they are for."

Younger men are in position of great power. Yet seemingly they have little to offer but pragmatic compromises. The most overworked word these days is "new." Books come out under titles such as *New Forces in American Business, The New Inflation,* or *A New Era in Foreign Trade.* Indeed, we speak quite frankly about this being a "new" world for us.

The former rigidity of the cold war system is breaking up and the conflict between the West and Russia and China is taking on new competitive forms. National policy-makers can no longer speak of physical containment of communism or of instantaneous nuclear retaliation. Neither approach will help much in dealing with Castroism in Latin America, or with the new states in Africa. A Chinese shadow is falling over America's commodity markets and there is talk of the Kremlin launching a monetary sputnik, a convertible ruble.[1]

Adrift in a Historic Void

In classrooms and executive training programs, the talk is of "Business Organization in a Changing Environment." The so-called "new" social forces are discussed and articles on "Re-appraisal" of this or that subject are written by the bushel. In a way these developments connote progress. The questioning of previously accepted policies and values is an important element in the formula of progress. But it is not enough. There must also be a feeling for and understanding of the historical process. The Founders of the Republic lived very much IN history and FOR history. In contrast to our enemies, we seem to be adrift in a historic void and can no longer see in the unfolding of history an orderly process. This, I feel, is the reason that we talk of the end of the ideological age; that the engine of social progress has run out of fuel; or, that we must "reappraise" or study the "new" era.

Interestingly enough, this is also the age in which there is a great deal of discussion over methods to improve the predictability of human behavior, particularly in regard to economic action. The consumer is being researched to death and so are businessmen as to their anticipated expenditures for plant and equipment. If, through sampling processes, we assess customer acceptability of a product, then why not approach historical development in the same attitude that it is predictable? It is indeed strange that a society which is lifting quantitative analysis to hitherto undreamed of heights should lose its traditional feeling for being part of an historical process characterized by the inevitability of human progress.

History for us today is made up of a mixture of shock, surprise, fear, anger, and hurt. The jet-propelled pace at which important events succeed themselves — particularly their almost instantaneous reporting due to the modern means of communication—give little or no time for adjustment, and we have permitted them to take away from us the feel for, the understanding of, and the belief in a historical orderly process.

America is still a young country. But youth is both a source of great strength and great weakness. The weakness stems from the fact that, historically speaking, an underdeveloped subcontinent required exclusive devotion to the immediate environment. The hewing out of a civilization in a wilderness demanded all the nation's time and energies. A sort of economic and political narcism thus developed. Protected from history's assaults by geographic isolation; kept by an abundance of natural resources from intimate commercial intercourse with other nations; free from a burdensome past; and, completely occupied by the task at hand, there was little time to be given to philosophic speculation once the cumulative process of economic development had begun. The emphasis was placed upon the "Now" and the "Here."

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1. Footnotes appear at end of article.

The evolvement of the computer makes men shout jubilantly: "If anything exists, it must exist in a definite quantity. If it exists in a definite quantity, it can be measured. Given the tools, we can and we shall measure it." To be sure, the new electronic devices are very important. But before the business schools and management training programs go overboard on the new techniques, perhaps the admonition which Justice Cardozo once gave to his law school students should be recalled. He said:

> You think perhaps of philosophy as dwelling in the clouds. I hope you may see that she is able to descend to the earth. You think that in stopping off to pay court to her, when you should be hastening forward on your journey, you are loitering in by-paths and wasting precious hours. . . . You think that there is nothing practical in theory that is concerned with ultimate conceptions. . . . You may find in the end when you pass to higher problems that instead of its being true that the study of the ultimate is profitless, there is little that is profitable in the study of anything else.

The Loss of Our Historic Optimism

The statistician says that statistics do not exist for individuals and that individuals do not exist for the statistician. Similarly, the future for you and me as individuals is inscrutable. But this does not mean that the future is equally impenetrable for all of us as a group, as nameless atoms and molecules in an historical process. Moreover, if we believe in a philosophy of optimism, rather than in a philosophy of mere adjustment to a changing environment, then challenges are not obstacles, but they become opportunities. This is a significant distinction.

Our negative attitude toward change has not only put a premium on "adjustment" in shaping managerial and social policies, it has brought in a Marxistic determinism through the back door. It is not unusual to hear—even in Wall Street—talk of the "inevitable trend" towards this or that. The president of a commodities exchange last summer bemoaned before my students the fate that has befallen commodities trading. Ten minutes later he characterized these troubles as being due to certain "inevitable trends"!

Whatever Marxism has done, it has succeeded in taking away from the West its traditional historic optimism. Mr. Khrushchev cries: "The flag of world communism will yet fly in my days over the entire world." Unless *opportunities* are capitalized upon rather than *obstacles* avoided, it is difficult to see how an historic attitude toward the future can be developed which will be based on the premise that the future will accommodate the striving which we bring to it.

I should, however, say that voices are beginning to be heard which stress the self-defeating aspects of our present attitudes. For example, Professor Abraham Chayes, of Harvard University Law School, attacks a policy of business regulation which emphasizes only the "pre-scriptive nay-saying side of the law" when dealing with corporations.[2] He points to the rule of law as being concerned with both faces of power—to restrain power as an evil and to develop power, under law, as a resource to be harnessed in the service of society.

One wonders indeed how much farther society can go in telling the corporate managers who determine, or should determine, the efficient allocation of national human and material resources what they cannot do, and then proceed to set up new governmental agencies, or enlarge the old ones, to see to it that the new rules are being observed. Professor Chayes points to the approach as illustrated by the action of our forefathers; they concluded that abuses of power were implicit in the institutional organization of state power under which they had lived. They, therefore, modified the social organization, but placed few substantive limitations on the sum total of public power. Contrast this with our approach to corporate power. Here, society has concentrated on forbidding specific exercises of economic power which were regarded as abuses to the point when at least a realization is dawning that the cumbersome regulatory apparatus—the inevitable by-product of this approach to corporate power—is interfering with the efficient allocation and use of the nation's resources. When businesses are being pushed to the brink of bankruptcy via the road of continued substantive limitations on the exercise of corporate power, the time would seem to be here for a critical look at such procedure. A concentration on the reorganization of the institutional organization of the corporation might prove more fruitful, radical as this approach may seem to the present generation.

Robert L. Heilbroner more recently illustrated this new awareness that more attention should be centered on historical forces and that the historical process must make sense.[3] Unless history is seen as an orderly development, no successful policies in business or in government can be formulated. My own thoughts here owe much to the writings of Mr. Heilbroner.

Walter Gutman (of Stearns & Co.) said recently in one of his market letters: "The problem that one has who is trying to make a fortune now, or who has a fortune, or who is trying to guide others with fortune, is to distinguish not so much between reality and illusion (because that would make him the master of all mystery as between continuance and end of illusion) but to recognize that part of every fortune is not reality but illusion." Failure to see events as part of a predictable pattern based on historic processes will certainly lead to delusion. Unless long-term forces are properly evaluated, investment assumes the proportion of out-and-out guessing. That increases risk and hence cost. *One would not be guilty of much exaggeration were one to say that much of the committing of resources and funds is today based upon the analysis of the froth of current events rather than their substance.*

Concepts are far more powerful than usually understood. The way we look at our world determines what we see and what we think. That, in turn, spells profit or loss. Perhaps these are days when it is advisable to recall Sir Frederick

Eggleston's dictum: "It is probably true to say that the ideological discussion at almost any stage of history is really out of touch with the real forces working at the time." An evaluation of historical forces might show that the ideological age is far from ended.

A Look at the Past

A quick look at the past should give us a better chance to understand ourselves, saddled as we are with a lack of historical awareness. For two thousand years, from the fifth century B.C. in Greece to the fifteenth century in Europe, man dreamed of the world he had left behind. He did not dream, as did man later on, of the world he intended to make. History was then nothing but a repetitive pattern, revolving around the exploit of kings and princes. The gods always kept the outcome in doubt; but when the results came in, there was never any departure from the past.

Plato, in his *Dialogues,* sees "two causes of the deterioration of the arts"—wealth and poverty. When the potter is poor and has no tools, he cannot work very well, "nor will he teach his sons or apprentices" to work with tools. When he becomes rich, "he will grow more and more indolent and careless." Another aspect of Greek thought was the belief in social evolution from democracy into mobocracy, thence to an oligarchy and eventually a new king would take over—only to be toppled later on.

The 20th century has seen revivals of this approach to historical development. Oswald Spengler, a German philosopher, insisted that cultures pass through a life cycle, from youth through maturity and old age to death. To him, "World-history is the world court, and it has ever decided in favour of the stronger, fuller, and more self-assured life. . . Always it has sacrificed truth and justice to might and race, and passed doom of death upon men and peoples in whom truth was more than deeds, and justice than power."[4]

Machiavelli sums up very well the attitude, so widely held earlier, that the more things change, the more are they remain the same. Men, he says, make events—men "whoever have been, and ever will be, animated by the same passions and thus they necessarily have the same results." People were always pushed by fundamental drives of envy or loyalty, love or hate, ambition or greed, or by the cancerous growth of power or the stifling effects of submissiveness. Writes Heilbroner:

> It is but a slight error, if error it to be at all, to picture the life horizons of the overwhelming majority of men in fifteenth-century Europe as essentially unchanged from what they had been in fifth-century B.C. Greece, or the experience of existence for the Asian cultivator of 1900 as in no significant way elevated over that of his remote forbears two thousand years before.[5]

The Three Thinking Forces

Three things changed man's thinking. One, a developing ability to change his status from servant to nature to her master. A niggardly environment became a horn of plenty. Second, man acquired a belief in the validity of the idea of human betterment for all the social atoms. And, third, man developed institutions, particularly the corporation, which would promote and assure spontaneous growth.

By the end of the eighteenth century a tremendous optimism had swept over Europe. The Marquis de Condorcet, a philosopher-historian and torch bearer of the French Revolution, shouts in his "The Esquisse," in 1795, that he will show

> from reasoning and from facts, that no bounds have been fixed to the improvement of the human faculties; that the perfectibility of man is absolutely indefinite; that the progress of this perfectibility — henceforth above the control of every power that would impede it—has no other limit than the duration of the Globe upon which Nature has placed us. The course of this progress . . . can never retrograde.[6]

The Marquis had no thought that the engine of social progress would

run out of fuel or that an ideological age would come to an end.

Eighteenth century enlightenment, with its unshakable confidence in reason and man's inevitable progress, was joined by the forces of the Industrial Revolution. We today are very much aware of the fact that it is still alive as a force to the point where yesterday's technological innovations soon look like a crude tooling up for tomorrow. Yet only 50 years ago, we had no sense of appreciation of the forces engendered by technology. Walter Lord speaks of the Harvard professor who saw, at the turn of the century, the country as being bound together by a network of trolly car lines and the reporter who was very much impressed with the belief that the automobile would do away with the noise of horses' hoofs on the pavement and the rumble of steel tires of wagons. Since the automobile was "shorter than the present truck and span, streets will appear less crowded."[7]

The political change which had begun with the English Revolution and culminated in the French and American Revolutions joined the forces of enlightenment and technology. Prior to that time, the notion of equality of man was pretty much confined to a feeling of religious brotherhood. Christians then, as now, professed to feel themselves alike in the sight of God. Then, as now, such profession of faith by no means was to be interpreted, however, that they were alike in the sight of each other. But these revolutions brought the intoxicating idea that henceforth everyone had the right to seek advance, the poor with the rich and the weak with the strong. The emerging capitalism added to the power of the new technology and political philosophy and was reinforced by them. Adam Smith's *Wealth of Nations* and the individual's right to the pursuit of his happiness came out of the same soil.

The idea thus took root that historical development was not dependent upon a miserly nature or the whims of the gods. Man now believed that his progress was inherent in the mass actions of men acting together. Today we have completely lost sight of the fact that all the new hopes and aspirations engendered by these new thoughts soon encountered undercurrents of dissent and, much worse, of downright disenchantment. Yet they were not able to derail the belief in man's inevitable progress.

Dismal Picture of Early Capitalism

The new industrial technology did increase output many times. But it gave all the appearances of a monster that lived on a diet of undernourished children and hapless adults. In the 1830's no more than 30%, if that many, of the employees in the English cotton mills were men over 18 years of age. The rest were women and children. The latter were often virtually sold by local authorities at the age of five to work in the mills. "They were hauled away by wagonloads, sometimes to distant towns; pauper parents stood helplessly by, with no opportunity to alter their fate."[8]

England's labor force had come from the starving handworkers who, unable to compete any longer, had to go into the new, damp, poorly ventilated mills. The enclosure movement had depopulated the countryside and sent the peasants drifting toward the towns. One authority writes: "The stress of the period 1824-1833 is evident among all classes of workers, but it was especially severe for the agricultural laborers."[9] Their weekly wages bought in 1793 six pecks of wheat; by 1824, and after a temporary improvement, this was still the case in 1840, their weekly wages still bought only 4.7—4.8 pecks.[10] To make matters worse, a rapid population increase made available more hands to factories and impoverished Irish workers migrated to England to better their conditions in the workshops there. Did man only exchange his subservience to self-willed rulers for the iron law of wages; i.e., that any increase in real wages would only effect a rise in population which, in turn, would depress wages to a bare subsistence level?

Our present impatience with the results of investments in underdeveloped countries stands in strong contrast to the results of early capitalistic progress in underdeveloped 19th-century Europe. When recent reports from China are viewed in the light of early and mid-19th century European economic history, they assume different aspects. Every step or "leap" forward that an evolving economy takes usually worsens discontent, for the early stages of industrialization, or more intense agriculture, can only aggravate dislocations. This effect is compounded when such attempts for greater utilization of an area's resources are accompanied by recessions in the older countries. The 1957-1958 recession decreased prices and sales of raw materials and food stuffs from underdeveloped areas by more than the amounts of aid and gifts that were poured into them by the West. An evaluation of trends can be disastrously wrong unless it is done in the frame of historical experience.

The second picture of the bright new world can be quite shocking, be it painted first by the Marquis Condorcet or by an American Secretary of State. In retrospect it is amazing that capitalism ever survived its early dreadful diseases. It was not only that conditions were bad for close to two-thirds of the people, but the manner in which the early economists wrote indicated that apparently one could no longer be sure the future would be much better.

The Rev. T. R. Malthus wrote in his *Essay on the Principle of Population* that

> . . . . there are few states in which there is not a constant effort in the population to increase beyond the means of subsistence. This constant effort constantly tends to subject the lower classes of society to distress, and to prevent any great permanent melioration of their condition.[11]

David Ricardo, like his father a stockbroker until the acquisition of a large fortune turned him into a landed proprietor, could only see the steady enrichment of the landlord at the expense of worker and capitalist alike. With a constantly increasing pressure on land re-

sources, poorer and poorer land would have to be cultivated which, he reasoned, would mean higher and higher returns on the superior land.

Reformers said in the 19th century that capitalism left to itself will never be the vehicle of a better tomorrow. "Every one saw that progress does not remove poverty and misery and was forced to modify his concept of human nature so as to explain the newly perceived facts. . . . At length it was asserted that equality and progress are opposed to one another, and that a nation must choose between them."[12] This theory died very slowly.

In 1894, an English social philosopher wrote:

> The central fact with which we are confronted in our progressive societies is, therefore, that the interests of the social organism and those of the individuals comprising it at any time are actually antagonistic; they can never be reconciled; they are inherently and essentially irreconcilable.[13]

Western policies in regard to the jet-propelled economic development of underdeveloped areas forget earlier discussions of values as they evolved at the various stages of development. The West made available trained personnel and funds and transferred scientific knowledge, which it had taken many years to develop, to the underdeveloped areas over a short span of years. In the West, death rates went down slowly as a result of gradual improvement in diets, housing, sanitation, and medical techniques. But since the success against disease in the underdeveloped countries has not involved fundamental changes in their social institutions, education, and in real income, fertility remains high and populations are rapidly increasing. The non-industrialized areas are now suddenly alive to the possibility of a tremendously increased standard of living for everybody, without the agonizing self-analysis that the West had gone through over a century on the conflict between the interest of the individual and society in an expanding economy. Today the assumption abroad is that equality and progress can be reconciled at all stages of economic develop-

ment. When the fallacy of this assumption will be discovered, new convulsions will occur.[14]

The 19th-century economists had only thought of their new economic laws as a means of predicting output, prices, or wages. The revolutionary character of the economic philosophy of Ricardo and his followers was not appreciated. Karl Marx saw everything in a different light. He looked at the world pictured in the new economic philosophy and saw a cramped valley which pushes men out. They think that once the limited areas have been left behind, they will now have reached unlimited possibilities for a better tomorrow. At first the new world seems to be different, but the theories of population, rent, and that of constantly diminishing returns, as cultivation of land is stepped up, destroy the beautiful picture of Utopia. Once again the world is no better than the old narrow mountain valley with the limited resources. People said economics was a "dismal science." The outlook was bleak, for the more people increased in numbers, the more intense became the clash of interests and the struggle for subsistence.

The Marx Predictions

To Marx, the forces of history provided a means of predicting social development; moreover, they were still the agents of human advance. But the price for man's advance was the abandonment of the prevailing social order. Yet once Marx had launched into his Utopia where "a new human race, freed from its chains, advancing with a firm and sure step on the pathway of truth, of virtue, and of happiness" would dwell, then he abandoned the principles inherent in historical processes. The Spanish philosopher Jose Ortega y Gasset speaks of Marxist Socialism as presuming "that what is desired by them as the best of possible futures will be necessarily realized, with necessity similar to that of astronomy. With consciences lulled by this idea, they have cast away the rudder of history. . ."[15]

Seemingly our propaganda efforts have failed to recognize this "casting away of the rudder of history." Mr. Khrushchev, on the other hand, apparently recognizes this vital omission in traditional Marxistic reasoning. It remains an interesting speculation, which the West could most profitably pursue, to what extent the new awareness of the continuously working historical forces is a major contributing factor to the differences of opinion between Peiping and Moscow.

Europe Loses Faith in Inevitable Progress

The wheel in the 20th century completed a full turn. Man's faith in his inevitable progress gradually evaporated. In the United States, historic optimism was still secure for a while yet. Steak and pie a la mode swept all dissenters and malcontents before them. Even in Europe, until the middle 1920's, there was still a great deal of the early faith alive. Alfred Marshall, the last of the Victorian economists, tells us that nature does not jump. "Thus progess itself increases the urgency of the warning that in the economic world, Natura no facit saltum. . . . Progress must be slow."[16]

Ortega y Gasset established the thesis that unless the masses are directed by an intellectual minority, chaos will result. He says: "Society is always a dynamic unity of two component factors: minorities and masses. The minorities are individuals or groups of individuals which are specially qualified."[17] To Oswald Spengler, the philosophy of optimism was a spot to be wiped out. Other writers, with large followings, expressed their disbelief in the ability of the triumvirate of technology, democracy, and increased wealth to solve the problems of human conditions and to assure a better tomorrow for all.

The carnage of World War I; the monetary inflation following it; the world-wide depression of the 1930's; the descent into the fascist hell; the Spanish Civil War; the decay of French democracy and France's humiliation at Munich; and, finally, the mechanized extermination process of World War II, changed man's thinking. He could no longer ask whether the forces of the new technology, democracy, and capitalism were the agents of a promising future. Now he asked: To what degree were they responsible for the unspeakable debacle?

The legacy of these catastrophes in Europe was the general acceptance of a pessimistic view of the forces of history. The keynotes now were: studies like those of Arnold J. Toynbee on "The Breakdowns of Civilizations" and "The Disintegration of Civilizations"; an obsession with the destructive aspects of nuclear energy without much if any thoughts for its constructive side;[18] and, discussions of plans of mere *survival*.

More recently, Europeans have begun to exhibit signs of a renewed confident expectation of inevitable progress at the hands of history. The "Inner Six," making up the European Economic Community of the Common Market, and the "Outer Seven," of the European Free Trade Area, are coming closer together. An Atlantic Community may be the eventual outcome. Such a vast new economic and political entity would wield power comparable in strength with that of this country and the U.S.S.R. It would do much to re-establish a belief in an optimistic view of historical forces.

Case of Spiritual Fatigue

In the Soviet Union, an historic optimism continues to represent the dominant view of the future. For a while it became the one sustaining hope to many an intellectual. It looked to them as if the forces of progress were still operating in the Communist Fatherland, but were chained elsewhere by the prevailing social systems. But when their leap to freedom turned out to be a leap into an even more confining realm than that of the old bourgeois capitalism, these intellectuals were overcome by spiritual fatigue. In many cases, they joined reactionary circles in their attack on forces neither of them could understand. In some cases, they simply sat on their haunches and bayed. For others, the

accused Commissar Rubashov personified the great tragedy when he says:

> But we had descended into the depths, into the formless, anonymous masses, which at all times constituted the substance of history; and we were the first to discover her laws of motion. . . . (Now) The masses have become deaf and dumb again, the great silent of history, indifferent as the sea carrying the ships. Every passing light is reflected on its surface, but underneath is darkness and silence. A long time ago we stirred up the depths, but that is over. In other words . . . in those days we made history; now you make politics. That's the whole difference.[19]

Attitudes in the United States

A stubborn optimism continued to prevail in the United States until the depression of the 1930's. A relative geographic isolation; ballots rather than bullets to effect social change; and, free from the attempts of others to invade, we saw no conflict between our chosen goal and the flow of history's currents. In contrast with Latin America and Europe, the flexibility of our social strata prevented the development of either a deadening submissiveness of agricultural workers to a landed aristocracy or a festering proletarian outlook. The American farm or industrial worker did not consider himself or his children as constituting a distinct social class. On the whole, the worker had the typical glowing bourgeois faith in education and general enlightenment which, he believed, would push him and his children along on the path of progress. In this country, the three forces of history—democracy, technology, and capitalism—enjoyed an unobstructed course. But what about the Great Depression?

Perhaps more than anything, we were puzzled because it would not cure itself. Our attitude was comparable to our feeling today towards the still "unsolved" agricultural problem. We are annoyed because the problem does not disappear. It is difficult for us to see that problems are rooted deep in the very historic forces that have worked such wonders for us in the past.

Today we find ourselves in a different situation. The newspaper pundits say that squabbles over the farm program, old-age medical assistance, or the minimum wage do not touch the fate of the nation. The central issue, we are told is not a Nixon or a Kennedy, but which party can deal best "with this tumult of change." Mr. Khrushchev pays visits to his neighbors and courts the new African nations in the United Nations. Fidel Castro threatens to expel us from Guantanamo Bay and brushes off American resistance with missile support from Moscow. The Soviets rushed technicians and equipment to the aid of the Congolese Premier Lumumba. New tensions appear in the Middle East. The list of our troubles, compiled from just one day's reported events, could be a very long one. The important part is that we *feel* now history as something that is wroking *against* us. We blame a Congress, a party, the President, or his Secretary of State. Deep inside there is a gnawing feeling that somehow things were muddled because of our sins of omission and commission. Newspaper editorials and luncheon speakers, not to mention aspiring candidates, tell us that, in the face of the setbacks we have suffered, we need a new sense of purpose; in short, we need new men with new ideas. What we need far more urgently is a fresh sense of what to expect next in the light of historical forces which I have here discussed. Events must be put into a meaningful frame.

The Same Forces Still at Work

The same historical forces which until recently have worked for *us* are still operating. The scientific and technological revolutions project visions of a tomorrow which are wondrous to contemplate. The frightening aspects of the new technology of war keeps out of sight the role of nuclear energy as servant. Says Dr. Teller:

> A nuclear explosion is cheap and big, and it can be used for earth-moving jobs. You could dig harbors, you could dig water-level canals. You can break up rock formation, impermeable rock formation underground, and you could regulate water seepage and water flow below the surface. You can use it in a strange way in energy production, because you might make a big explosion very deep down in the ground and then mine the heat as today volcanic heat is mined in both Italy and New Zealand, converted into live steam and used to turn turbines.[20]

No matter what we may think of the Congo's Lumumba or Indonesia's Sukarno, the ideas of political aspirations, ushered in with the English, French, and American Revolutions, are now voiced by peoples who have heretofore lived in poverty, subservience, and neglect. Why are we surprised when such expressions now engender violence? Equally obvious, in a world with anti-capitalistic nations, the course of economic development must now assume a different from.

Let us talk more in terms of social forces, at home and abroad, and ascertain their strength, speed, and direction. There are times when they can be slowed down; at other times, they can be at least diverted temporarily. The operations of these forces cannot be stopped. Mr. Heilbroner points most realistically to our previous optimistic conditioning which blinds us to the world of today.

> If there are 'forces' in history, we prefer not to think about them; and if we must think about them, we assume that they will be, as they always have been, on our side . . . . after a long voyage in which the favoring currents of history bore us in the direction in which we sought to navigate, we have emerged into an open sea where powerful contrary winds come directly into conflict with our passage. Looking at events in terms of broad historical forces makes it rather naive to assume that a handful of men at the summit can bring home peace during our time.[21]

Straws in the Wind

The "powerful contrary winds" are seemingly beginning to shift. Scared into rapid and widespread introduction of labor-saving machinery and techniques by the threat of possible Soviet labor shortage as a result of the sharp decline in the birth rate earlier, surplus workers are now showing up in the U.S.S.R. Russian economists fear particularly surplus farm workers. One of them predicted recently 20 to 30 million unemployed agricultural workers by the 1970's. Collective farms are

even advised to adopt a straight money wage rather than payment to workers by a share in the net income of the farm in proportion to contribution in order to induce surplus farm laborers to move elsewhere.

The Soviet citizen is beginning to know the meaning of income for "discretionary spending." The consumers are becoming choosier and conflicts arise with the planning system as inventories of unwanted goods pile up. Many a pure-bred Communist must wince when he sees billboard and truck-side advertising, not to mention radio and TV commercials. There is hesitancy in Russia to increase investment in more distributive facilities, lest investment in plant and equipment will be impeded and we might see before long a Russian equivalent of our studies under the title "Does distribution cost too much?"[22]

If the Russians realize, as Oscar Altman says, that the ruble will not and cannot be a world currency until Russia's production and international trade are much larger than they are today, will not discretionary spending of the Soviet consumer also be larger? What will be the impact of greater consumer freedom, or of a convertible ruble, giving the privilege to its holder to purchase any Russian good, upon the planning hierarchy? The watching of the workings of historical forces will then become far less nerve-wracking.

Other signs could be cited. For example, a correspondent of "The (London) Economist" reported this summer that in the Russian equivalent of suburbia:

> Russians do not share the Anglo-Saxon passion for gardening. . . . Undergrowth is given its head. The trees, bushes, and high palisades create the final privacy for which the soul yearns after the hideous overcrowding and watchful pressures of urban Moscow. There (in "Dachaland") is a peace here that passes the understanding of, and therefore alarms, the Party, which insists that leisure must be as collective as work.
>
> "The Americans are the only real communists," said a Russian who had seen the neighborly open gardens of their suburbs, as he ruefully contemplated the defense works of Dachaland. Mr. Khrushchev himself has given blunt warning that communism cannot be achieved through dachas. Dacha life is indeed shockingly anti-Soviet, but it is fast growing.[23]

SOME FINAL DEDUCTIONS

1. "Co-existence" with Russia is forced upon us, and vice versa, by technological realities. The thunderbolts of Zeus demand it. *Ergo,* the future will be shaped primarily by the impersonal, non-heroic determinants of history.

2. "Co-existence" should not be something radically new to the West. For centuries, two separate worlds co-existed, Europeans and North Americans, as the more or less exclusive beneficiaries of the multiform revolution which had slowly matured in their lands, and the Latin Americans and Asiatics, with the notable exception of the Japanese, as more or less the victims of that revolution. By "victims" I do not mean the results of intent to injure in the predatory sense of colonial exploitation. I mean that economic penetration came to these regions without any of the historic preparations that had been the concomitant of this development earlier in Europe and North America. Self-sufficing village economies were destroyed and their inhabitants exposed to the vagaries of Western commodity markets and the business cycle. Is it really surprising that now they return their blows upon us just as incomprehensibly and forcefully as we once inflicted blows upon them? Moreover, we compounded the problem by introducing the wonder drugs without a parallel infusion of prerequisite cultural patterns so that now intense population and social pressures are building up.

3. The new environment created by technical advances is at least as demanding, incomprehensible, and arbitrary to us as the old natural environment used to be to our fathers and grandfathers. Surely no one will maintain that we have made so far peace with the new dynamic technology through proper social organization. Universities should develop a school of "social engineering," a blend of engineering, mathematics, economics, political science, and the humanities. Much needs doing here. We have gone far beyond the margin of diminishing returns in dealing with the corporate organization through procrastinating and "nay-saying" regulatory bodies.

4. The labeling of leaders, particularly in newer countries, as neutral, pro-West, or pro-East has little meaning. These emergent nations have usually little actual choice and must adopt a more or less centralized control over the economy. Contrast the facilities at the disposal of the West when economic development started to get underway and think of the horrible conditions which nevertheless existed in the 19th century. Then, to appreciate how little alternatives are available, look at these new nations with their crippling lack of power; lack of repair facilities; absence of financial markets to mobilize savings; shortages of foreign exchange; few foremen and mostly people who cannot read or write or who do not understand the rhythms of industrial life; businessmen who profiteer rather than produce; government officials full of notions of bureaucratic superiority, and baksheesh or worse, *graft.*

The real question: Is, in a given case, the appeal of collectivism intellectual, emotional, or functional? I suspect that in most cases the acceptance of centralized planning is functional, coupled perhaps with at least some bitterness on the part of a leader. He recalls that the West educated him and then when he returned, he was thrown into jail. His one offense was that he had been an "A" student and learned his lesson too well about individual dignity, hope, and aspiration.

5. Economic development in its early stages, as seen in our own economic history, deepens rather than mitigates discontent. A fierce and bellicose nationalism is either deliberately engendered by the new leaders or it develops as a natural compensatory device for the inevitable disappointments of the first decades of economic growth.[24] It is here that the interest of the individual and society clash.

One very obvious reason for this clash, so noticeable earlier in the

West, is that society requires a high volume of saving to enable it to divert resources from consumption into capital formation. The individual, however, has listened too well to the promises made to him by his own leaders, or by foreign voices, and thus wants a higher standard of living *now*. The more unequal the distribution of the national income is, the higher can be the rate of savings and capital formation and the more intense will the clash become between the "They and I" or the "Today and Tomorrow."

6. The basis for analysis of long-term trends consists of an awareness and understanding of these historical forces and processes. It also includes an appreciation of the force behind the secular religion of communism and socialism. Cruelty and abuse of power will not induce their followers to rebellion. Institutions live as long as people believe in the reality of their ideals. Incitation to the desertion of a cause is also a negative approach to problems. We can accomplish more by keeping our historic optimism alive. This will occur if we see in the historic forces of technology, democracy, and capitalism with its ancillary institutions despite the problems they shower on us, the means by which a better future on an enduring foundation can be brought into being. As I said, *there are signs of shifting winds.*

To pursue power politics, as Khrushchev has been, and is, pursuing means that a man has nothing but *contempt* for the minds he is trying to influence and manipulate. For a while this may go unpunished. But this game of power politics destroys the one cohesiveness any culture ever has; namely, the belief of the people in their way of life. But if we are right in our belief in inevitable progress through the working of these historical forces, then the West must lead. And it is Western ways that the world wants. Even in China the English alphabet will be introduced over the next ten years.[25] There has never been any intent to change to the Cyrillic alphabet.

FOOTNOTES

1. That at least some of our fears are premature and exaggerated may be seen from a perusal of Oscar L. Altman's article "Russian Gold and the Ruble" in International Monetary Fund Staff Papers, April 1960, pp. 416-438. The author states: "It has been recognized in the U.S.S.R. itself that the ruble can become an international currency only when it is responsible for a much larger share of the world's production and international trade, and when prices in communist countries are made more competitive than they now are with those in capitalist countries."

2. Professor Chayes' article "The Modern Corporation and the Rule of Law" is one of 14 essays in The Corporation in Modern Society, edited by Edward S. Mason, and published by the Harvard University Press, 1959.

3. Robert L. Heilbroner, The Future as History—The historic currents of our time and the direction in which they are taking America. New York: Harper & Brothers, 1960.

4. Oswald Spengler, The Decline of the West. New York: Alfred A. Knopf, 1926, p. 507.

5. Robert L. Heilbroner, op. cit., p. 19.

6. Anne Elizabeth Burlingame, Condorcet — The Torch Bearer of the French Revolution. Boston: The Stratford Company, 1930, pp. 221-222.

7. Walter Lord, The Good Years—From 1900 to the First World War. New York: Harper & Brothers, 1960, p. 17.

8. Heinrich E. Friedlaender and Jacob Oser, Economic History of modern Europe. New York: Prentice-Hall, Inc., 1953, p. 155.

9. Abbott Payson Usher, An Introduction to the Industrial History of England. New York: Houghton Mifflin Company, 1920, p. 503.

10. Ibid., see table on p. 504. (A peck is ¼ bu.)

11. Malthus, An Essay on the Principle of Population, 8th ed. (1878) p. 9.

12. Simon N. Patten, The Development of English Thought. New York: The Macmillan Company, 1899, pp. 301-302.

13. Benjamin Kidd, Social Evolution. London: Macmillan and Co., 1894, p. 78.

14. Professor Kingsley Davis points for example to "the widespread underemployment of males in the agricultural sector" in Latin America. See "Recent Population Trends in the New World: An Over-all View." The Annals of the American Academy of Political and Social Science. March 1958, pp. 1-10. Also his "The Unpredicted Pattern of Population Change" in The Annals, May 1956, pp. 53-59.

15. Jose Ortega y Gasset, The Revolt of the Masses. Mentor Books, p. 33.

16. Alfred Marshall, Principles of Economics. New York: The Macmillan Company, 1948, p. 249.

17. Jose Ortega y Gasset, op. cit., p. 9.

18. Edward Teller says: "The danger of fallout from nuclear activity has been exaggerated to such an extent that I feel that the only real medical hazard has become the hazard of stomach ulcers." Elsewhere he contrasts Jules Verne's optimistic attitude with our pessimism. "When a new big possibility comes up fraught with uncertainty and with danger, he says: 'Let's try it.' In contrast, today's science fiction doesn't tell us anything except how terrible, how dreadful the consequences of science will be." "Energy Patterns of the Future" in Energy and Man, a Symposium. New York: Appleton-Century-Crofts, Inc., 1960.

19. Arthur Koestler, Darkness at Noon. New York: The Modern Library, 1941, pp. 82-84.

20. Energy and Man, op. cit., p. 67.

21. Robert L. Heilbroner, op. cit., pp. 57-58.

22. See for example Marshall I. Goldman, "The Soviet Standard of Living, and Ours," Foreign Affairs, July 1960, or his "Marketing—A Lesson for Marx," Harvard Business Review, January-February 1960.

23. "Soviet Midsummer." The Economist. July 16, 1960, p. 283.

24. I recommend in this connection the reading of a Canadian scientist's report on his recent extended trip to China. J. Tuzo Wilson, One Chinese Moon. New York: Hill and Wang, 1959.

25. Dr. Wilson writes: "It has now been agreed that over the next 10 years the Roman alphabet will be introduced. . . . Although from pride they always said Roman, it is in fact the English alphabet of 26 letters that is to be used." Ibid., p. 137.

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THE GROWTH STOCK PHILOSOPHY

A Present Worth Technique for the Evaluation of Common Stocks

by John F. Bohmfalk, Jr.

THE POPULARITY ENJOYED BY "GROWTH STOCKS" among investors today has given rise to new concepts of security analysis and has created a new philosophy of investing, sometimes to the consternation of the traditionalists.

Essentially, this approach relies on the principle of compounding growth of earnings, tied up in a present worth package to make it palatable, and broadly speaking replaces speculation on stock market and economic cycles with an informed appraisal and judgment of a company's future growth. Since the probabilities of speculating correctly about the trend of a company's growth are stronger and more reliable than market cycle forecasting, and since profitability is also greater, advantages for the "growth stock" philosophy seem apparent.

The philosophy has coincided with the needs of the times. Large aggregations of investible funds in the hands of financial institutions and trusts require management which is concerned not only with preservation of capital but also with continuity of assets, competitive return on principal, and performance toward a future goal. From another standpoint, the dynamics of capitalism tend to force emphasis on science and education wherein certain probabilities of gain are reducible to mathematical quantities. Investors' identification with progress, and their need to contribute to (and profit from) growth are thus satisfied through the outlet of "growth stocks."

To understand the new concepts, to evaluate them, and to formulate a new philosophy of investing, this article has been prepared in three sections:

I. A Trilogy: Talent and Technology, High P/E Ratios, and Formula for Growth
II. A Rationale for Growth Stock Pricing
III. The Growth Stock Philosophy

A TRILOGY

1. *Talent and Technology—Influence on Stock Values*

"What now are the real bases of long-term growth? The answer, I believe, is not capital accumulation, though this plays a necessary albeit restricted role. The answer, I suggest is rather scientific research and invention."[1] Dr. Hansen's thought suggests that talent has the leverage now, that security values reflect the organization of talent, and technology for growth.

Sumner H. Slichter described the profitable part of technological research as an "industry of discovery" which is "devoted largely to discovering or creating investment opportunities." In this industry, Slichter deduces that an increase in its output (discovery) tends to increase the marginal value of its product, such that "the greater the output of research, the stronger tends to be the demand for still more output."

Without laboring the philosophic background, it is important to realize that the accelerating rate of technological change has brought the level of national research expenditures to above $10 billion; and in proportion to Gross National Product, research expenditures are 13 times as large as they were in 1930. In the last four years, industry's research and development outlays have doubled, and should increase by more than a third in the next four years, according to a McGraw-Hill study.

Research spending by itself is not the only measure of activity in scientific areas. For example, the Defense Department's budget of $41 billion includes about $5 billion allocated for research and development, devoted mostly to aircraft, missiles, and space technology. However, government contracting for hardware has increasingly tended toward procurement of prototype units and toward support of small production runs of developmental equipment. More and more frequently, small scientific companies are concerned with instrumentation which is largely applicable to the development of new vehicles such as aircraft and space vehicles, as well as to the general advancement of the nation's technology, rather than to military production equipment. We believe that military strategy is now geared primarily to science and technology.

In fact, the national challenge posed by totalitarian forms of government is generally being met by accelerated efforts in both fields of science and education. Instead of trying to "psyche" our Red opponents on the political front, or to provide the "hard sell" to oppressed peoples, the national governmental policy is being forced to turn to the scientist and the educator for leadership. This trend must grow, and it will provide increasing opportunities for really productive activity

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1. Alvin H. Hansen, "Federal Tax Policy for Economic Growth and Stability," report to the Joint Committee on the Economic Report, November 9, 1955.

and generous rewards for those who provide the contributions. So talent and technology *are really creating capital assets* out of the brilliance of certain scientists, and talent really has the leverage now.

2. *High P/E Ratios, Water or Yield?*

Blind faith in somebody else's talent and technology is not the answer to investing, but careful selection of securities of companies whose management appreciates and nurtures the research process and stimulates a creative atmosphere has paid handsome rewards in the past and will in the future. The process of creation does not lend itself to predictability, as "discovery" is not ordinarily planned in advance. However, certain probabilities doubtless apply to research operations of modern industrial organizations directing large groups of technologists, such that the momentum of the research apparatus will produce discoveries from time to time. Past discoveries usually provide a long-term basis for growth, often at a predictable rate. In the case of smaller research-oriented companies, product development follows a feast-or-famine pattern which requires some speculation on the timing of a new discovery.

The generation of new capital and its employment on asset expansion programs during the interim between discoveries provides for continuing growth on a more moderate scale. Thus, growth momentum is a function of a progression in the flow of ideas and in the flow of cash. Predictability of the rate of progression varies from industry to industry, company to company, yet investors ordinarily make commitments for a period long enough to assure some degree of certainty as to the future.

Future Expectations

Investment thinking nowadays tends to emphasize protection of future buying power through purchase of equities, at the presumed expense of protection of assets which might be accomplished through bond investments. But as a matter of fact, there is a growing realization that protection of assets, and protection of buying power, are merging objectives which are best secured through growth stock investments.

Of course, investing is still essentially a risk-taking operation, and the level of securities' prices is still a function of basic values, yields, fears, and some imponderables. So the milennium has not arrived as yet, but new concepts of investing have arrived and do suggest that good growth stocks had been seriously underpriced.

As shown later, the annual compound gain to the investor in IBM, Rohm & Haas, and the like, was 23-25% for the 1947-59 period, and most of this gain was capital gain subject to a 25% maximum tax rate if taken. We hasten to point out that the "average" growth stock provided a compounded annual return of 14% on principal over that period. If this is watered stock, at least the yields are delicious (see April, 1959 issue of *Fortune,* "Those Delicious Growth Stocks").

So long as our ideas about the future—for business, for the pace of new discovery, and for potential rewards of research—are reasonable, then we can afford to discount the future in prices of securities.

3. *Formula for Growth, Cash and Ideas*

In any business situation, growth can take place in tangible assets, total revenues, cash flow, net income, per-share earnings, dividends, etc. Although each represents tangible, measurable evidence of growth, the three estates of modern enterprise—management, labor, and the stockholder—often view these avenues of growth quite differently. Each group tends to concentrate attention on the kind of growth thought most important, sometimes to the exclusion of other growth areas.

For example, some investors place so much emphasis on current dividends that they overlook the possibility that large "cash flow"—reported earnings plus depreciation, amortization, and depletion charges—with small payout may expand earnings rapidly, allowing far larger dividends in the future. Considering the classic growth situation, IBM's 1959 cash flow per share from domestic operations alone was over $15 (and almost $20 including foreign operations) and growing at the rate of over 20% per year over the last 12 years. This year's cash flow including foreign operations ought to be about $22 per share.

We will emphasize that *expected total yield* over the life of an investment, *not current yield* should be the investor's prime objective, whether the investment is being made directly in plant and equipment or indirectly through the medium of the stock market.

We believe that a large and rapidly growing per share cash flow should be a more important investment criterion for most investors than current percentage yield. In fact, we think that earnings, cash flow, and dividends are so intimately inter-related that both management and stockholders should concentrate on all three factors. Our basic thesis is that a rapidly growing cash flow provides the base for expanding earnings which, in turn, makes possible increasing dividends. When we speak of growth, then, we refer primarily to the rate at which per-share cash flow is rising, for this determines the future growth of assets, sales, earnings, and dividends.

The tabulation labelled "Historic Growth Rates: 1947-59" illustrates growth rates—per-share cash flow, earnings, and dividends — as computed by the "least squares" method. For those companies which are mainly assets oriented, we employ per-share cash flow as the best illustration of past growth. For those companies which are mainly dependent upon a flow of ideas, we prefer to use growth of earnings and dividends for our historic column on the next page.

A RATIONALE FOR GROWTH STOCK PRICING

Essentially, our discount technique is a mechanistic treatment of "present worth" computations of future sums. The background for *present value* approaches to securities' valuation has an impressive lineage dating back more than a quarter century to such innovators as

HISTORIC GROWTH RATES: 1947-1959

	Per Share		
	Cash Flow	Earnings	Dividends
1. Polaroid	34.3%[1]	36.9%[1]	23.9%[2]
2. Texas Instruments	32.0[1]	31.9	—
3. Haloid	22.5	15.1	9.7
4. IBM	22.1	14.7	11.1
5. Rohm & Haas	17.8	15.9	20.5
6. Owens Corning	17.0	18.8	21.6
7. Tennessee Gas	16.7	10.8	10.0[1]
8. Fansteel	16.6[3]	18.1	16.4
9. Corning Glass	16.6	17.0	18.9
10. Minn. Mining	14.4	13.7	17.3
11. Minn.-Honeywell	13.8	10.4	10.1
12. Trane	12.9	10.4	10.2
13. Monsanto	12.8	7.5	4.2
14. National Lead	12.5	13.8	18.5
15. Florida P. & L.	12.4	13.5	10.7
16. Dow	12.2	8.2	15.1
17. Alcoa	11.6	7.2	9.6
18. Louisiana Land	11.5	11.1	10.8
19. Houston Lt.	11.4	9.7	9.7
20. Texas Utilities	11.1	10.8	11.7
21. American Potash	10.4	7.8	6.0
22. American Cyanamid	10.4	7.3	12.4
23. Stauffer	10.4	5.7	13.9
24. Sperry Rand	10.3	6.5	11.0
25. DuPont (ex GM)	9.6	9.8	9.9
26. Eastman Kodak	9.4	8.7	10.4
27. Hooker Chemical	9.2	5.4	9.3
28. Vick Chemical	8.9	8.3	4.6
29. Union Carbide	8.8	4.6	7.5
30. General Electric	8.6	8.3	12.3
31. General Motors	8.4	6.1	9.3
32. U. S. Steel	8.0	10.7	9.2
33. RCA	7.9	5.2	11.3
34. Standard of N. J.	7.7	6.7	15.1
35. Nat. Cash Register	7.7	3.7	6.6
36. Addressograph	7.6	5.9	7.9
37. Int. Paper	7.1	2.8	7.3
38. Allied Chemical	7.0	2.7	3.1
39. Hercules	7.0	5.2	3.9
40. Aluminium	6.0	—	5.4
41. Johnson & Johnson	5.5	4.2	11.5
42. Procter & Gamble	5.1	3.8	4.8
43. Pennsalt	5.0	—	—
44. Westinghouse	2.1	—	4.0

[1] 1949-1959
[2] 1953-1959
[3] 1951-1959

Caleb Stone, Samuel Eliot Guild, John Burr Williams, and doubtless many others. But these men were ahead of their time, since stocks more often than not reflected current yields and book values in their market prices. A change in market philosophy, in the early 1950's, witnessed a great improvement in investors' confidence in the future, to such an extent that discountable future prospects (for higher dividends) began to be reflected in market prices for stocks.

At about this time, promotion of a "discounted cash flow method" of appraising industrial capital expenditures was widely advocated in various publications of Joel Dean, Horace G. Hill, Jr., and J. C. Gregory. All of these techniques employ the same basic theme: the estimation of a flow of payments (dividends or other net cash income) over the life of a property for the purpose of ascertaining the interest rate of return on capital invested, or alternatively, the present worth of the property given a desired return on capital. The oil industry has for years applied discounted cash flow, techniques particularly for evaluating purchases of proven oil properties for cash or production payments. So discounting methods for establishing present worth have a long and honorable history, one which has served investors well in many different walks of life.

In recent years, there have been a few voices advocating the use of present worth methods for common stock valuations, not the least vociferous being that of Nicholas Molodovsky (an Associate Editor to The Financial Analysts Journal) who has contributed many thoughtful articles on the subject to this publication. The contribution of this author, as more fully outlined herein, rests in the development of a practical, systematic and mechanistic correlation of present worth with growth prospects.

The Discount Method

The classic approach to common stock valuation relies on the theorem: a stock is worth the discounted present value of all future dividends. In the usual analysis of stocks, application of this rule has been neglected in favor of resort to current dividend yield and price-earnings ratio. In our view, neither of these statistics provides sufficient information *per se* to be of much use in the appraisal of growth stocks, and they must be combined with considerable judgment and experience to give any worthwhile results.

In essence, discounting, as we do it, provides a system for the incorporation into securities valuation of several new dimensions beyond those now employed (as earnings and dividends), such as: growth rate of dividends and earnings; the period of time over which the investor expects growth to persist; and the rate of return required by the investor on his principal.

It can be seen that the addition of these new tools—growth rate, years, and rate of return—to the older tools of dividend yield and P/E ratio creates a complex of statistics; but the complexity increases exponentially in the discount method which weaves some six variables into a tight system which precisely defines security values in terms of these parameters. To make discounting meaningful and useful, we must preserve the essential analytical comparison of *price vs value,* the cornerstone of security analysis. But since price is a momentary thing, effective discounting requires a more basic unit of comparison as the independent variable: namely, *growth rate.* Thus, the discount method seeks to compare a current discounted growth rate (the growth that is implied in the current market price of a stock) with a valuation growth rate (the Analyst's judgment of future prospects for a stock).

As a first approximation, the current discounted growth rate, when applied to growth stocks, yields much more meaningful information. This statistic is vital since it defines the future for a stock, whereas the P/E ratio and dividend yield are concerned only with the present—present earnings and present dividends. The discounted growth rate binds all the requisite informa-

tion-price, earnings, dividend, growth over a period of time, and total yield to the investor. It is computed by discounting all future dividends which may be expected. The discounted growth rate is, therefore, the rate of earnings or dividend growth which a company must maintain to be worth its present price.

Growth Stocks and Valuation

A growth stock may be defined as a stock having a high probability of larger future earning power. The recognition of larger earning power in the future permits capitalization of some portion of that anticipation in the present price of the stock. This factor of anticipation is a function of the rate of growth in per share earnings of a growth stock. The discounted growth rate measures that anticipation, and as a measure of a stock's future, in terms of earnings, it may be compared directly with an historical rate of earnings growth and with an intelligent estimate of projected earnings growth for a particular company.

The only reason for holding a common stock is to secure a yield. An investor's primary concern is yield, commensurate with the risk incurred. In the case of a bond, it is defined as yield to maturity. In the case of a growth stock, we define yield as the *base rate* which is the compound interest rate of aggregate return an investor secures on his principal. The rate implies a risk factor; naturally an investor requires a higher return (base rate) for a more speculative, lesser quality investment. And finally, the base rate measures investors fears of deflation and inflation. At deflated stock market price levels, the base rate is high as investors require very high returns (yields) before risking capital, and vice versa.

An investor makes a commitment for a period of time through the voluntary purchase of common stocks. The commitment is on the average a period of years (currently 12-13 years) over which time the anticipated future becomes a matter of reality; i.e., earnings have grown more or less in line with expectation. Thus, the discount period is a measure of investors' confidence in the future. A long period, as 12-13 years, denotes considerable confidence, while in times of general pessimism, the discount period would drop back to about 7-8 years.

In a sense, then, a growth stock has a yield to maturity, just as a bond. To complete the book on any stock, we must consider price, current earning power, and percentage payout of earnings as dividends. Present value (or price per one dollar of earning power) is computed by discounting dividends which are growing at a definable rate over a given period of time; at maturity, and assuming no further growth, and therefore a 100% payout of earnings as dividends, the final earnings are discounted and then capitalized at the base rate. The sum total gives present value. To be precise, five variables are involved:

Dependent Variables: 1. Base rate (interest rate of return); 2. Discount Period; 3. Percentage payout of earnings as dividends; 4. Present value (Price-earning ratio); and the Independent Variable: 5. Growth rate of per share earnings and dividends.

Discount vs Growth

In *Charts I and II,* the mathematical relationships between dividends and their present worth are easily visualized. The only difference between the two charts is in the growth rate of the dividend: 5% in one case, 20% in the other. Note that whereas the initial dividend received in the twelfth year from the growth stock (*Chart II*) is about five times that of the other stock.

Present Value vs Growth

Charts III and IV are constructed ideally by discounting a series of growing dividends and summing the amounts. Start with $1 a share of earnings; apply the payout percentage to each year's earnings to get the dividend amount; then multiply by the discount factor to obtain the present value. The Valuation Basis defines the discount factor (8% base rate) and the period of dividend growth (12½ years). A capitalized future value is next determined by discounting the terminal (13th-year) earning power and then dividing by the base rate. Finally, present value is the sum of growing dividends plus the capitalized future value. *Charts III and IV* are constructed in just this way.

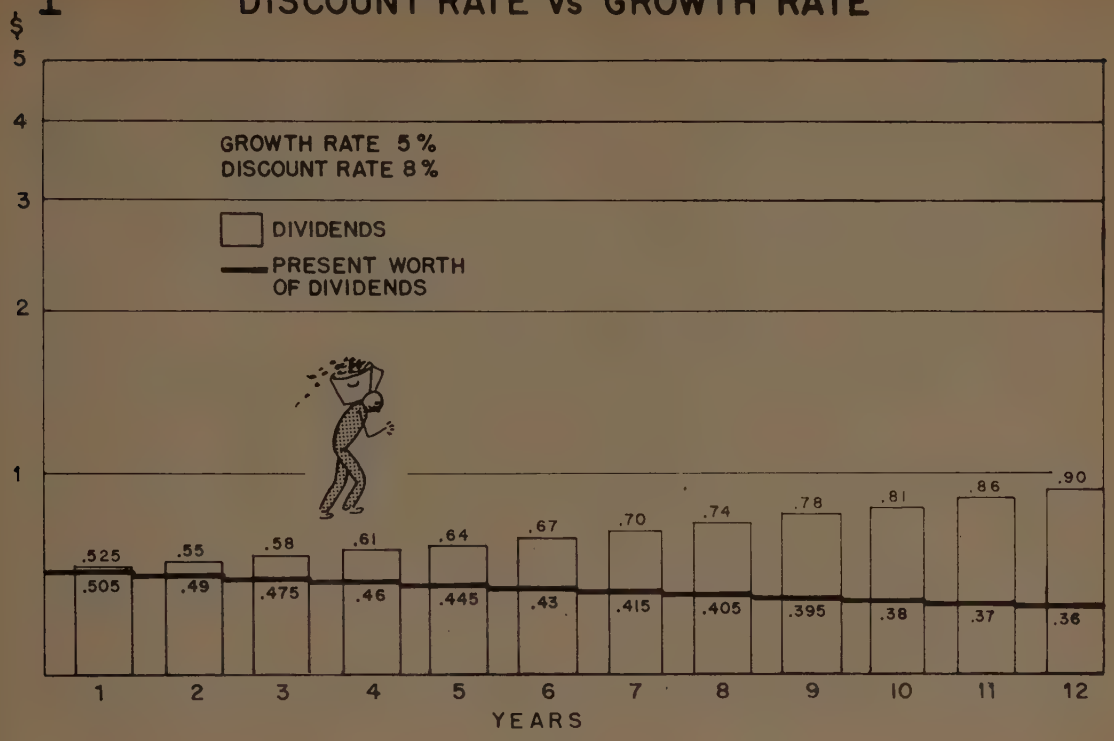
Application of the Discount Method

We have prepared dozens of these charts employing different Valuation Bases. Now if it were possible to select an homogeneous group of stocks of the same quality (such that one could replace another in all respects except for differences in growth prospects) then we could doubtless find a Valuation Basis which would apply equally to all. This is the procedure we follow: by an empirical approach, compute P/E ratio and payout individually for a group of growth stocks of like quality, then read off growth rate (as the point of intersection of P/E ratio on the appropriate payout line). The series of discounted growth rates so obtained are compared against a projected or valuation growth rate for each stock; the idea is to follow this procedure with several charts, finding the one Valuation Basis wherein closest agreement is reached between the series of discounted and valuation growth rates.

Thus, selection of the proper discount period and base rate is a matter of trial and error. Key stocks like DuPont, GE, Honeywell, Minnesota Mining, Rohm & Haas, and others can be used as anchors, as can the Dow-Jones industrial average as follows:

DJI at $39 Earned Per Share, 50% Earnings Payout, 6½% Growth Rate

Discount Period—Years	Base Rate %	DJI Equivalent Price
13	7½	710
12	8	630
11	8½	575
10½	9	520
10	10	450
9	11	390
8	12	340


I
DISCOUNT RATE vs GROWTH RATE
$
5
4
3
2
1
GROWTH RATE 5%
DISCOUNT RATE 8%
DIVIDENDS
PRESENT WORTH OF DIVIDENDS
.525
.505
.55
.49
.58
.475
.61
.46
.64
.445
.67
.43
.70
.415
.74
.405
.78
.395
.81
.38
.86
.37
.90
.36
1
2
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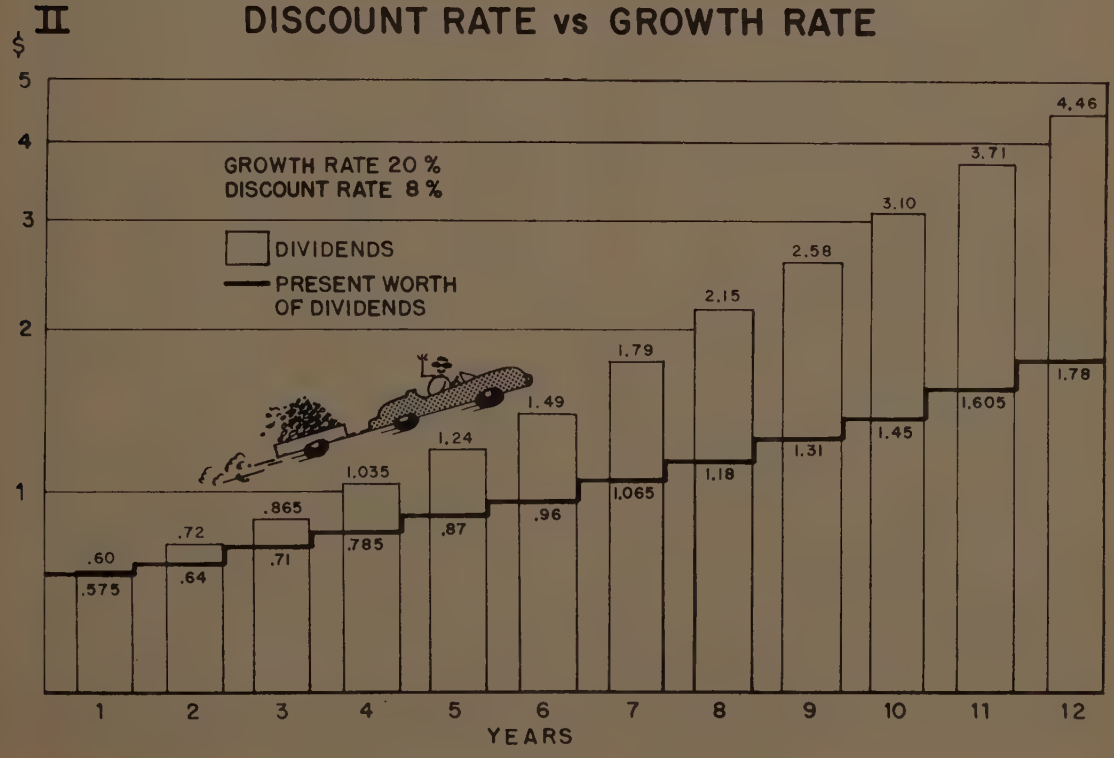
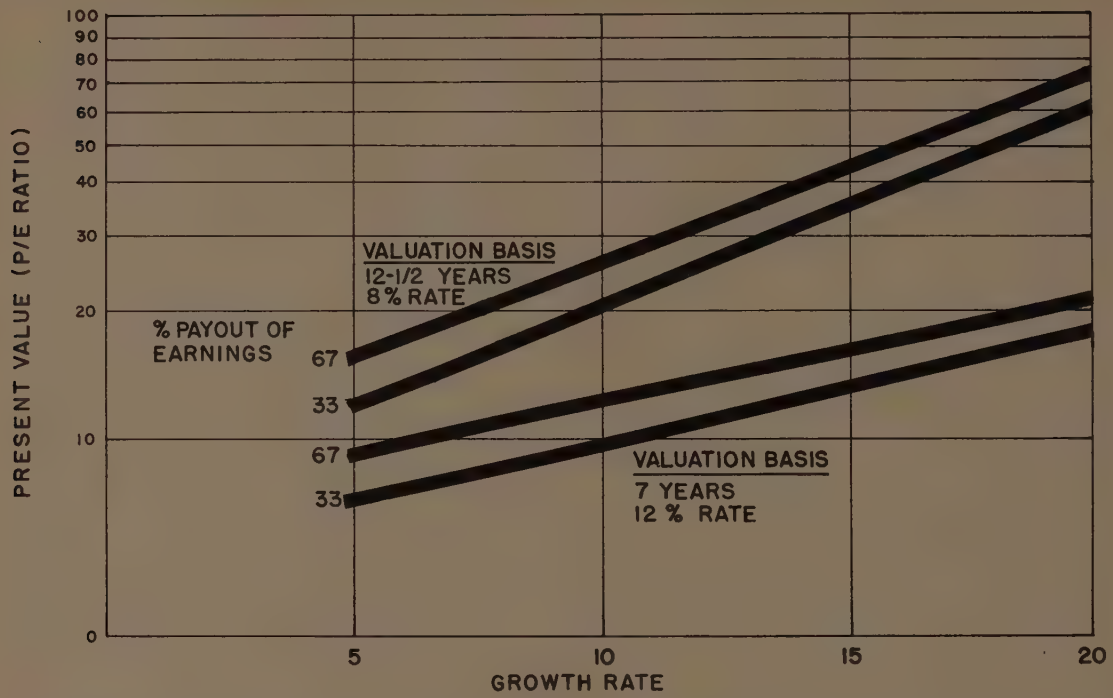
4
5
6
7
8
9
10
11
12
YEARS


II
DISCOUNT RATE vs GROWTH RATE
$
5
4
3
2
1
GROWTH RATE 20%
DISCOUNT RATE 8%
DIVIDENDS
PRESENT WORTH OF DIVIDENDS
.60
.575
.72
.64
.865
.71
1.035
.785
1.24
.87
1.49
.96
1.79
1.065
2.15
1.18
2.58
1.31
3.10
1.45
3.71
1.605
4.46
1.78
1
2
3
4
5
6
7
8
9
10
11
12
YEARS

III PRESENT VALUE AND GROWTH RATE



Separation of over-priced stocks can be made from under-priced by this technique. Again, the discount approach offers a valuable tool for studies of one industry group of stocks versus another group, with the view toward emphasizing or switching stocks. It serves to direct security analysis efforts into those stocks which seem to offer greater value. It provides a rationale for those who do not understand anticipatory prices for growth stocks and thus fear high price-earnings ratios. The influence of earnings payout on present value is readily apparent from the graphs.

From experience, we have learned that it is best to solve for growth rate as the independent variable, rather than present value. First, investors buying growth stocks should have some clearly defined idea as to the rate of earnings growth required to satisfy the anticipatory price for such stocks. Second, an earnings growth rate of a stock is *per se* not dependent on investors' hopes for the future or their yield requirements, whereas present value is so dependent. Therefore, whenever there is a change in the price level of common stocks (a fairly frequent occurrence), growth rate remains as an independent anchor.

In this particular approach, the base rate or yield is standardized at a given time for a preferably homogeneous group of stocks. The tentative assumption is made that for a given quality or risk level, the interest rate of return (base rate) will be the same for each stock; if it were not, investors would soon equalize the returns. Then, if a growth stock discounts a future growth rate, which is significantly below a realistic appraisal of its future, it should be bought provided other stocks of comparable quality and risk are discounting in line with expectations. The discount technique is therefore a relative one.

DEFINITION OF TERMS

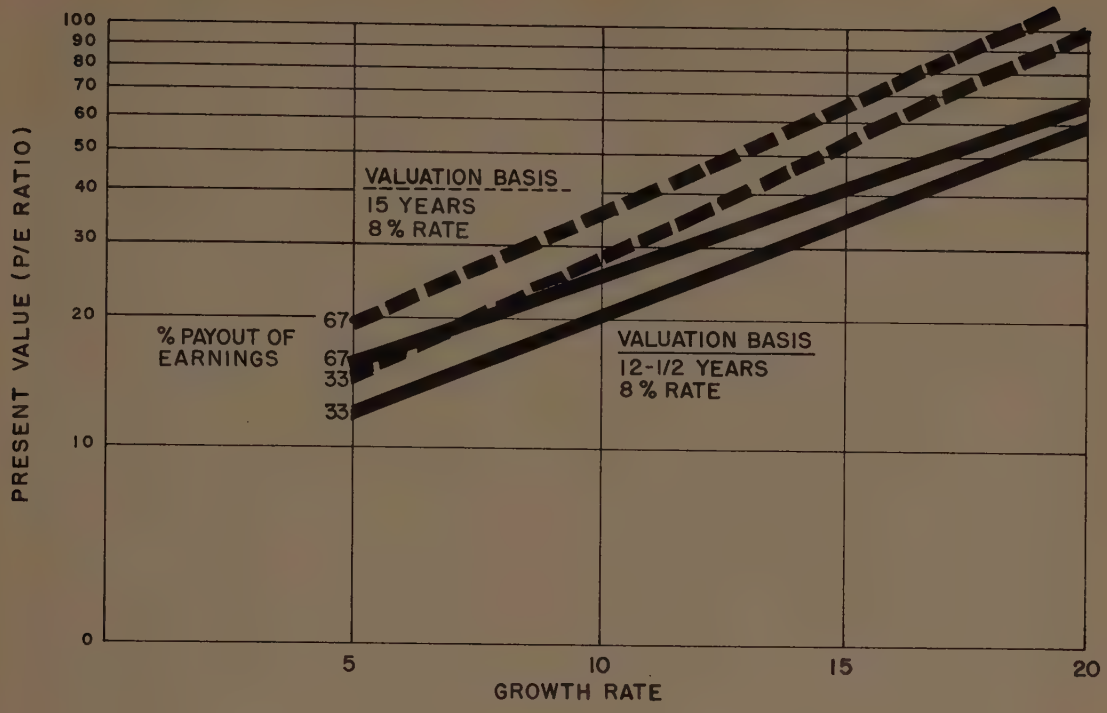
Historic Growth Rate, %

Per share data (cash flow, earnings, dividends), adjusted for stock dividends and splits, are plotted on semi-log graph paper, for an extended period (back to 1946 if data are available). Connecting the points helps the viewer in deciding whether there is continuity and whether a straight line trend will define the period of continuity. We compute the equation of the points by use of the method of least squares, draw in the trend line, and calculate the slope of the line to obtain the growth rate.

The growth rate so defined is of course influenced by wars, inflations, depression, new financing, mergers, and many other elements. Since these distortions will always be a part of the business scene, it is pointless to make adjustments in the record when we are trying to find out how stockholders have fared over an extended period.

Earnings Payout, %

Payout links earnings to dividends. Management customarily has a dividend policy which ideally returns to the stockholder all earnings not needed to at least



maintain the past growth rate of the business. The earnings payout used in computing the discounted growth rate is the present indicated dividend divided by current earning power. Stock dividends are treated as a return on capital and are ignored except as above.

Stock Price, Earned Per Share, P/E Ratio

The price-earnings ratio is very easily computed by dividing the current price of a stock by its current per share earning power. Earnings should be the total of the past six months and the projection of the next six months.

Growth Rate, Our Valuation

The valuation growth rate is our best estimate of a company's future growth, and does not differ markedly from the historic growth rate without good reason. Essentially, growth rate is the product of reinvested capital (retained earnings plus depreciation) times the return on capital invested. It can be altered by resort to borrowed funds, by changes in management's ability to select profitable projects and to maintain the rate of return, by fundamental changes in an industry or in the markets served, by unaccountable dry spells in research productivity, or by any one of a great number of events. It therefore becomes necessary to rely on the historic record and to know as much about the company as possible so as to spot trends in the making. We view growth as a matter of certain mathematical probabilities over a long term; after making intelligent appraisals on a qualitative basis, it is advisable to check against mathematical calculations of growth rates (as return on capital times last year's reinvested capital per share divided by last year's per share earnings). Then, for any one industry, the scale of valuation growth rates will place the highest value against the best company and the lowest against a company with relatively poor performance.

QUESTIONS AND ANSWERS

Is there an adjustment for depreciation? To the extent that changes in depreciation policy effect the growth of stockholders' dividends, we recognize this factor in the valuation growth rate of the stock. The Financial Analyst should be assured that the management is maintaining the earning power of existing assets through adequate repairs and maintenance expenditures, and is setting aside enough through depreciation reserves to replace present capacity and (as a practical matter) to build new earning power. Where depreciation charges increase at a faster rate than net earnings we tend to incorporate this faster growth in the valuation growth rate by computing the growth trend of cash earnings (depreciation plus net income less cash dividends).

Is there an adjustment for capitalization? Here again, the tendency, particularly in the chemical industry, to accelerate depreciation accruals suggests that companies following such practices will be self-financed in the future. So we allow for less future common equity dilution of earnings in the valuation growth rate appraisal.

In another illustration, growth utility stocks which sell at prices substantially exceeding book values can sell common, thereby producing some earnings dilution but at the same time greatly increasing the earnings base on which the regulated returns are computed. Thus, changes in capitalization are considered to be a management device for promoting future growth in the most prudent manner.

What about the old concept of price versus value? The business of appraising securities requires more modern and advanced techniques than those afforded by a simple comparison of present price against some value concocted by reference to where a stock used to sell in relation to past earnings, dividends, and a DJI average. The discount technique offers a statistical approach, using present price, earnings, dividend, a base rate and discount period to determine the current discounted growth rate; this growth rate corresponds to "price" in the old system. Our valuation growth rate, determined by analytical techniques already mentioned, corresponds to "value." A comparison of the two growth rates provides some ideas as to whether a stock is underpriced or overpriced.

Doesn't this underpriced or overpriced determination neglect quality? The usual securities concept of quality is often confined to a loose image of a company in the context of its past performance. Quality, in the sense that we use it in connection with our discount technique, is defined in terms of the return demanded by an investor on his investment in relation to the risk accepted. The mathematical definition is the base rate: the present base rate of 8% applies to top quality growth stocks. If a stock has a discounted growth rate below the valuation rate, we must then conclude that either the stock is underpriced, or that the investor is obtaining a higher-than-standard (8%) return. The latter supposition may be explored in terms of the risk level (is the stock really AAA in risk?) and in terms of the higher base rate (return) needed to produce the proper discounted growth rate. The similarities of the discount technique and bond valuations may now be more apparent.

What is the significance of the 8% return secured on a top quality growth stock? This return (base rate) is the compound interest rate secured by the investor on his principal when invested in a top quality stock. It is related to the 12-13-year discount period which is the assumed period over which growth is theoretically maintained; at the end of this commitment period, growth is assumed to cease, and all earnings are paid out as dividends as if the investor converted the equity to a paid-up annuity. For purposes of illustration, performances of a number of stocks over the past 11 years is shown in Table A. In the first column, the 1957 dividend is divided by the Dec. 31, 1946, price paid for the stock to obtain the present yield on original cost; in the second column, the total annual yield on the original investment cost is computed using the cumulative dividends received plus the Dec. 31, 1957, market value of the stock (Source: Bankers Trust Company investment accumulation statistics).

Table A

Eleven Year (1946-1957) Record of Selected Growth Stocks

	1957 Div., % '46 Price	Compound Annual Return %
DJI	12.2%	12.0%
St. & P. Indus.	13.2	13.4
Addressograph	13.9	18.5
Air Reduction	6.8	6.0
Allied Chemical	7.7	9.0
American Cyanamid	11.6	13.5
American Potash	8.2	13.0
Burroughs	6.7	10.5
Cutler-Hammer	17.8	11.0
Diamond Alkali	6.1	4.6
Dow Chemical	9.5	15.5
E. I. duPont	13.5	15.2
Eastman Kodak	9.0	13.5
Freeport Sul.	19.3	17.6
General Electric	16.7	18.1
Hercules Powder	5.6	9.5
Hooker Chemical	10.0	11.3
I. B. M.	8.5	25.0
Minn. Honeywell	19.1	17.9
Monsanto	4.8	7.2
National Lead	12.6	19.0
R. C. A.	16.7	15.0
Rohm & Haas	3.9	23.2
Union Carbide	11.1	12.8
Westinghouse	8.0	11.6
Zenith	26.3	21.5

The figures in themselves make a very interesting study, but they are set forth here to illustrate the compounding principle at work. A rough average current dividend yield on original cost is now 13% on these stocks, and the compound annual return also equals 13%—about the same as is indicated by the S.&P. industrial index. The point is that the discount technique uncovers the present compound interest rate demanded by the investor at current price levels for growth stocks.

What is the significance of the earnings payout percentage? Most often the Security Analyst weighs earnings and dividends in some unequal proportions in appraising a stock. The discount technique as we apply it supplies a balance between earnings and dividends through the medium of "payout," thereby bringing into play a degree of flexibility in handling the discount technique. This is particularly true at a time when earnings may be depressed such that the payout approaches 100%, or in the reverse condition; in either case, one soon discovers a relationship between payout and risk (that the dividend might be cut) through the whole fabric of discounting.

Do all stocks uniformly discount the future? We find that there are degrees to which stocks discount the future, ranging from a zero discount (or even a negative discount which might apply to a wasting asset) to the full discount accorded the best growth companies. Companies like Avon Products and Tennessee Corp. have experienced marvelous earnings growth over the past 20 years, but investors had not, until recently, developed a degree of confidence in these companies that would permit capitalization of their future in present prices of the stocks. These, of course, are ideal types of invest-

Table B

Valuation Basis		June 1958	Basic Yields June 1959	July 1960
"AAA" Rated: 13 yrs., 8% rate.	AAA Corporate Bonds	3.60%	4.40%	4.27%
"AA" Rated: 12½ yrs., 8½% rate.	AAA Base Rate	8.50	7.75	8.00
"A" Rated: 12 yrs., 9% rate.	"Intrinsic Value" Index	2.36	1.76	1.87

CURRENT VALUATION OF GROWTH STOCKS

Priced as of July 29, 1960

Stocks	Historic Growth Rate, %	Earnings Payout %	... Current Data ... Stock Price	E/S	P/E	Growth Rate, % Curr. Disc.	Our Valuation
"AAA" Rated							
Alcoa	12	51	$ 74	2.35	31.5	13	13
American Home	16½	68	176	6.45	27.3	10½	10½
Corning*	14½	50	156	4.00	39.0	15	14
Dow	10	47	81	3.00	27.0	11½	13
DuPont (ex GM)	10	63	133	6.05	22.0	8½	10
Eastman Kodak*	9½	55	122	3.75	32.6	13	11½
Florida P & L	12½	46	60	2.10	28.6	12	11½
General Electric	9	65	85	3.10	27.4	10½	10
IBM*	21	26	525	11.50	45.6	17½	18
Minn.-Honeywell	12	47	156	4.25	36.7	14½	12
Minn. Mining	13½	41	74	1.45	51.0	18	17
Proctor & Gamble	6	52	118	5.00	23.6	10	9**
Rohm & Haas	17	14	635	22.00	28.9	14	16
Union Carbide	9	60	119	6.05	19.7	7½	9½
Upjohn	9½	39	55	1.85	29.7	12½	12
Dow-Jones Ind. Av.	6½	53	617	38.50	16.0	6½	6½
"AA" Rated							
Abbott Labs	2	56	65	3.40	19.1	8½	7½
Addressograph	14	42	77	2.15	35.8	15½	11½
Allied Chemical	7½	60	54	3.00	18.0	7½	8
American Cyanamid	8½	60	54	2.65	20.4	9	10
American Express	11½	53	50	2.25	22.2	10	14
Ampex	43½	0	34	0.65	52.3	21½	22**
Avon Products	21	45	65	1.90	34.2	15	15
General Telephone	11	61	29	1.20	24.2	10½	9
Goodyear	12	35	36	2.60	13.8	7	9
Haloid	16	31	55	0.80	68.7	22½	25**
Hercules Powder	5	41	74	3.15	23.5	11½	11½
Hooker	8	54	34	1.85	18.4	8½	9½
Houston Lighting	9½	50	82	3.20	25.6	11½	9½
International Paper	4½	47	98	6.40	15.3	7	8½
Johnson & Johnson*	6	29	66	3.40	19.4	10½	10
Lilly (Eli)	9	73	76	2.75	27.6	11	10
Litton	50	0	84	2.00	42.0	19½	20**
Merck*	13½	58	86	2.75	31.3	13½	13½
Monsanto (ex Chemstrand)	10½	44	39	2.30	17.0	8	11
National Cash Reg.*	8	41	57	2.95	19.3	9½	8½
National Lead	11	72	89	4.50	19.8	8	8**
Owens-Corning	17	36	95	2.75	34.5	15½	15
Parke, Davis	3½	60	45	2.35	19.1	8½	8
Pfizer	9½	50	32	1.60	20.0	9	9
Pitney Bowes	9½	50	37	1.20	30.8	13½	9½
Polaroid	50	5	237	3.65	64.9	23	25**
RCA	8	41	60	2.45	24.5	12	9½
Raytheon	17	0	39	2.50	15.6	10½	9½
Reynolds Metals	19	29	46	1.75	26.3	13½	16
Schering	40	53	60	2.65	22.6	10½	12½
Searle	14½	63	60	1.90	31.6	13	13½
Smith Kline	26	69	50	1.80	27.8	11½	14
Sperry Rand	10	53	23	1.50	15.3	6½	8½
Stauffer	11½	48	52	2.50	20.8	9½	12
Texas Instruments	32	0	226	4.65	48.6	21	21**
Vick*	12½	33	111	4.00	27.8	13½	13½**
Westinghouse	4	49	56	2.45	22.9	10½	8
Zenith	10½	46	117	6.50	18.0	8½	11**
"A" Rated							
Aerojet-General	35	0	57	2.25	25.3	16½	20 +
Air Products	23½	13	40	1.60	25.0	15½	15**
American Machine & Foundry		49	64	3.25	19.7	10½	14
American Photocopy	25	32	65	1.90	34.2	17	20 +
American Potash	10	52	44	2.30	19.1	10	10
Atlantic Research	50 +	0	47	1.10	42.7	21½	20 +
Audio Devices		0	19	0.60	31.7	18½	20
Beech Aircraft	5½	33	68	6.00	11.3	6	13
Beckman Instruments	23	0	84	2.40	35.0	19½	20
Bell & Howell	7	25	46	1.60	28.7	16	15
Brunswick		14	64	4.20	15.2	10½	14
Carter Products	50 +	33	62	3.00	20.7	12	13
Celanese		40	24	2.50	9.6	3½	10
Cenco	15	29	44	1.40	31.4	16½	20
Cessna Aircraft	26½	32	31	2.50	12.4	7	20 +
C.B.S.	16	42	38	3.30	11.5	5½	8
Cubic		0	57	0.90	63.3	25	20 +
Eitel-McCullough	10	0	24	0.85	28.2	17½	15
Electro Instruments	50 +	0	47	1.80	26.1	17	20 +
Fairchild Camera		13	174	4.00	43.5	20½	20 +
Fansteel	16½	32	59	3.10	19.0	11½	12
First Charter	30	0	25	1.05	23.8	16	20 +
Foxboro	19	38	41	1.60	25.6	14	15
Friden	12	21	115	4.75	24.2	14½	13½
Hewlett-Packard	35	0	78	1.40	55.7	24	20 +
High Voltage Eng.	50	0	133	2.60	51.2	23	20 +
Indiana General	17	40	54	1.50	36.0	17	17
International Rectifier	28	0	24	0.55	43.6	21½	20
Kawecki		0	65	1.60	40.6	21	18
Magnavox	9	36	46	2.75	16.7	10	9½
Nielsen, A.C.	33	34	104	4.45	23.4	13½	20
Perkin-Elmer	13	0	38	1.00	38.0	20	20 +
Piper Aircraft	25	26	60	3.85	15.6	10	20 +
Sanborn	20	43	46	1.90	24.2	13	20
Spencer Chemical		58	32	2.40	13.3	5½	9
Statham Instruments	30	0	34	1.15	29.6	18	20 +
Thiokol	25	0	39	1.30	30.0	18	20
Transitron	50 +	0	48	1.30	36.9	20	20 +
Universal Match		30	65	1.65	39.4	19	17
Varian Assoc.	27	0	58	0.90	64.3	25	20 +

Earned per share is computed as the estimated earnings for the calendar year 1960.
* Includes unremitted foreign earnings.
** Rate revised.

ment, since the discount yield is half again as much (if growth continues according to schedule) and since there is some hope that such stocks will eventually discount the future in their market prices. Steel, rubber, glass, cement and such stocks probably discount a modest growth, but is is very difficult to handle cyclical companies with small growth rates (in the neighborhood of 3-7%) by the discount technique.

A Workable Discount Technique

A reduction of the present worth method to practice is shown in Table B, "Current Valuation of Growth Stocks." Selections of securities, as discussed in the next section, can be made on the basis of current discounted vs valuation growth rates shown. Basic yields shown in the top right section of Table B have no immediate significance except one of building a possible future correlation between bond and stock yields.

THE GROWTH STOCK PHILOSOPHY

No matter how you slice it, rewards must bear a direct relationship to risks assumed such that all investment goals involve a balancing of yield vs risk, a maximizing of yield along with minimization of risk. To accomplish the latter, investors will search patiently for "hidden assets" or inside information which will produce added value to present assets.

With growth stocks, the chief element of risk is a possibility of a change in the rate of growth of a company, and this possibly may be related to new technological developments or to a change in management. So the new growth stock philosophy demands some considerable technical competence on the part of the investor in appraising scientific enterprise and management. Past performance is the most valuable single guide, but it can be disastrously misleading for the appraisal of future prospects. The Security Analyst, therefore, must of necessity be pre-disposed toward companies with a demonstrated record of performance; toward industries which have developed a growth momentum; and which have every prospect of scoring further substantial gains. Many other factors are considered, such as a patent structure, research capabilities, attitude of governmental agencies toward the industry, the nature of competition within the industry, and so forth.

When all these matters have been carefully assessed, then the growth stock philosophy can be brought to bear.

The Philosophy

(1) The time to buy a growth stock is now. The whole purpose in such an investment is to participate in future larger earnings, so *ipso facto* any delay in making the commitment is defeating.

Investing "now" poses certain problems, not the least of which is the availability of funds, but dollar-averaging programs provide an acceptable alternative. The natural corollary of dollar-averaging is a tendency to modify the program to take advantage of bargain prices. Thus, market weaknesses *may as a rule be appraised as buying opportunities for growth stocks.*

(2) Growth stocks represent speculations on the future of so-called growth companies. These "futures" are built into the price of the stock, as they represent the investors' identification with corporate management's ability to build for the future at definable rates.

Practical limitations on the amount of acceptable risk to the investor dictate a price ceiling of about 80 times current earnings power for stocks of the most rapidly-growing companies. This maximum is essentially the present worth of a stream of payments growing at a rate of 25% for 12-13 years and discounted at 8%

(3) Return on capital invested is maximized by concentrating on the fastest growing stocks, and the risk assumed is minimized as an investor's cost basis is further reduced below the present price of the security. The pyramid in growth stocks should be designed to provide maximum return at least risk by building the most economic structure.

The compounding principle underlies our growth stock philosophy and is designed to carry the investor safely through trading markets. It is to be expected that on occasion hysteria will rule in the stock market, but rational evaluations should tend to insulate quality growth stocks from panic price action in adverse markets (or as the old pros put it, a good quality stock will always bail you out in the long run).

Breath of Suspicion

The growth stock philosophy which we have espoused has been fortuitously reinforced in the last few years by spectacular market action of the glamour issues. But it need not have been, as the philosophy assumes a steady state of the market as a whole in predicting present values for growth stocks. For example, under the steady state assumption, if Minnesota Mining grows 17% a year, the stock ought to appreciate in price 17%, all else being equal. Whereas since the end of 1959, 3 M has appreciated some 30%, while the DJI has declined 5½%.

Increasing emphasis on relatively few glamour issues is partly a function of lack of interest today in oils, chemicals, utilities, steels and other formerly popular investment media. It is also a function of the "national Sputnik neurosis" which has focused attention on science and education, two major centers of national growth. As a result, the pressure of investment funds seeking outlets in the newer, more glamourous situations, which are more often than not in thin supply, has driven up prices of growth stocks.

As we say, a growth stock philosophy of investing does not pre-suppose ever higher multipliers of earnings for its verification; the fact that "AAA" growth stocks are discounting a 13-year period of growth ahead seems scary, yet secular trends of growth for U.S. population and for newer industries identified with dynamic change do not suggest 13 years as an extreme limit to future compounding. Yet extreme capitalizations of the future,

such as seem to be materializing for numbers of stocks, produce an unhealthy vulnerability to psychological upsets in investor attitudes.

But the most serious risk to which the investor is exposed is simply the breath of suspicion that a company may not grow as rapidly as expected. The collapse of the P/E ratio deriving from a loss of confidence in a company's future prospects is far more serious than trends in the market as a whole. The analogy to the game of Russian Roulette comes to mind; this is the game of chance in which the odds are usually in favor of the player, but the results of the unexpected coming to pass are catastrophic, to say the least. And so it is with growth stocks. Careful attention to and diversification of growth stock investments are the logical answers.

Buy, Hold or Sell

Criteria for buy-hold-sell recommendations, long-term and short-term, can be built around the growth stock philosophy and the discount principle as outlined above. Certain generalizations given below provide such criteria, but stock selections for the Base Stocks in the Growth Stock Portfolio emphasize such considerations as management capabilities, quality of stock, and degree of confidence in future prospects.

Long-Term Criteria:

BUY. The analyst makes a commitment that the stock selected as a buy has well-above-average prospects and is among the best managed in the group of like-quality issues. (Examples are MMM, IBM, ROH in the group of "AAA" Rated stocks.)

HOLD. The hold category is a catch-all for most of the remaining stocks which are performing about as the analyst expects in terms of future prospects.

SELL. Stocks of companies which appear to be mismanaged and which are falling behind in competitive status or sales.

Short-Term Criteria:

BUY. The discount principle is more directly applied here in conjunction with the current earnings trend. For example, a buy would be indicated whenever the current discounted growth rate is in line with or below our valuation growth rate and/or whenever a significant bulge in earnings appears, exceeding the rate of earnings increase that our valuation rate would lead us to expect. Such an earnings bulge probably does not signal a new-term trend and thus require a change in our valuation growth rate but may produce a rise in the price of a stock (example, Vick).

HOLD. Where a balance exists between current discounted and valuation growth rates and when forecasted earnings and dividend improvement is in line with normal expectations, a hold is indicated.

SELL. The converse of a buy recommendation, a sale is indicated whenever a stock over-discount and/or current earnings trends do not come up to our valuation expectations (example, RCA, National Cash Register).

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Paints

Foods

Chemicals

Financial Highlights from The Glidden Company 1960 Annual Report

Net sales	$197,490,831
Income before taxes	$13,638,356
Net income	$6,690,356
Per share	$2.90
Dividends	$4,620,700
Per share	$2.00
Depreciation and amortization	$6,959,971
Per share	$3.01
Expenditures for plant and equipment	$8,764,000
Working capital	$59,721,934
Current ratio	4.97 to 1
Shareholders' equity	$92,846,742
Per share	$40.18
Number of shareholders	20,969
Number of employees	6,151

You are invited to write for a copy of The Glidden Company 1960 Annual Report

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Price/Earnings Ratio in Financial Analysis

.... its Use and Abuse

by Sanford L. Margoshes

THE RATIO OF MARKET VALUE of common stock to reported net income is a widely utilized guide in the financial decision-making of investors, businessmen and regulatory authorities. The pervasive impact of the price/earnings calculation underscores the significance of clearly defining the meaning and use of this ratio and its limitations as a tool of financial analysis. Price/earnings ratio is generally computed by dividing market price per share of common stock by reported net income per share, during a stipulated time period. This time period may be as short as one accounting quarter or as long as 10 years. Price/earnings ratio may be adjusted, moreover, to reflect time lags between price and earnings/share, and oftentimes cash income (net income plus non-cash charges) is substituted for reported net income. In the following discussion of price/earnings ratio, it will be assumed that "earnings" refer to reported net income, and that the corresponding price of stock is reasonably concurrent with these earnings. It will also be assumed, for the sake of simplicity, that there are no personal income taxes.

Whereas price divided by earnings/share is normally stated as a ratio, earnings/share divided by price is expressed in percentage terms and will subsequently be referred to as the earnings/price rate. This earnings/price rate has been used as a measure of the cost of equity capital, as a guide to the rate of return which regulated enterprises should be allowed to earn, and as the minimum acceptable rate of return in project evaluation. Attention might consequently be directed profitably to the following questions:

> Why do "growth" stocks sell at relatively high price/earnings ratios; i.e., low E/P percentage rates?
>
> Can the earnings/price rate be relied upon as a measure of investors' rate of return expectations?
>
> Is the E/P rate a valid measure of the cost of equity capital?
>
> Is it economically sound to apply the E/P rate as the minimum acceptable rate of return in project evaluation?

Determination of Price

The market price of stock may be considered to be identical in an economic sense to the price of any income-producing asset. Business assets represent reservoirs of stored-up potential cash generation with price being dependent upon cash income expectations in the stream of time, and the rate at which investors discount this cash income back to a present value. Other things being equal, the price of an asset will rise as the likelihood of growth in future cash income improves and as the uncertainty surrounding the forecast is reduced.

Investors are concerned with trying to earn the highest rate of return on equity capital during the period in which these assets are committed. In arriving at a purchase price for a manufacturing plant, the businessman either implicitly or explicitly makes a forecast of the future cash income that the plant can produce and relates this projected cash income to the out-of-pocket expenditures necessary to produce it. If the forecast of cash income over the economic life of the venture exceeds the estimate of cash outlay there will be profit. In order to determine an economically sound measure of the earning power of the investment, it is necessary to take into account the time period over which the cash is spent and received and the size of income receipts and expenditures as they occur in time. The technique by which investors can relate cash income as it is expected to be received during the life of the investment to the cash outlays is known as "discounting." The percentage rate at which the forecast cash income must be discounted in order to make it equal to the present or discounted worth of the investment is the rate of return earned.

The price of a share of stock is determined basically the same way as the price of a manufacturing plant. When the investor buys stock, he is purchasing a proprietary interest in the future earnings and dividends of the company. The higher the forecast earnings and dividends, the more the investor will be willing to pay. The amount that he is willing to pay depends not only upon the outlook for earnings and dividends but also upon his best guess as to how investors will view the firm sometime in the future.

The Price Depends . . .

If an investor purchases a share of stock in a firm which is in the process of gradual liquidation, the price may be defined as the present value of the expected cash throw-off during the remaining life of the firm discounted at a rate of return acceptable to the investor. In this situation, the price of stock is directly comparable to the price of any income-producing asset with a finite life. If on the other hand, the investor purchases

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a proprietary interest in a "going concern," the price he will be willing to pay depends upon the cash dividends which he expects to receive while he holds the security and the sale price at the time of disposal. In this more usual case, the price of the share of stock may be defined as the present value of cash dividends/share plus the present value of the stock at the time of sale discounted at the rate of return percentage acceptable to the investor in view of the risks and uncertainties surrounding the forecast. The rate of discount is likely to be conditioned by the rate of return available to the investor in alternative investment opportunities rather than being dependent upon the internal rate of return (earning power) of the assets of the particular firm in which he is investing.

It is evident, therefore, that the level of present earnings may play a relatively unimportant role in establishing the price which will be bid for a share of stock. An investor may be inclined to pay $50 for $1 of currently reported earnings of one firm, and only $15 for the same amount of currently reported earnings of another company. The extent to which he will be willing to pay more depends upon the outlook for the earnings and dividends of the two companies and the investor's best guess as to how other investors will view the two firms sometime in the future.

Growth Stocks and Price Rates

The price/earnings ratio, or its reciprocal the earnings/price rate, is one of the fundamental yardsticks utilized by investors in the evaluation of the level of market prices in general and the price of individual stocks in particular. Examination of a sample of listed securities will usually reveal a wide range in earnings/price rates. What explanation can be offered for this variation and why do the so-called growth stocks sell at such low earnings/price percentage rates?

While the rate at which the current earnings of a stock is capitalized is the outcome of psychological as well as economic factors, the forecast rate of growth in reported net income/share is likely the single most important determinant of the price investors are willing to pay. Assuming that no dividends are paid, and, further, that no change in the earnings/price rate would occur between the time of purchase and the time of sale, the earnings/price rate would have no bearing on the relative attractiveness of one stock investment versus another. The best buy would be the stock whose reported net income per share is expected to grow most rapidly. Thus, the stock whose earnings are growing at 10% per year will increase in value at the rate of 10% per annum as long as the earnings/price rate remains unchanged during the investment period. Under conditions of constancy in earnings/price rate and assuming no dividends are paid, the price of a stock will rise directly in proportion to the increase in earnings/share.

In the real world of uncertainty, however, the buyer of stock must consider not only the likely course of future growth in earnings but also the change which might occur in the earnings/price rate between the time of purchase and the time of sale. The inter-relation between earnings/price rate, the forecast of earnings growth, and the change in valuation of reported earnings between the time of purchase and sale is subtle. Investors are willing to bid-up the price of a growth stock in relation to current earnings on the basis of an expectation of a relatively rapid rate of growth in the future earnings of such a company, in comparison to the poorer projected increases in earnings of companies in more stable or declining industries. The extent to which a growth stock will be bid-up is conditioned by the prospective rate of growth in alternative stocks and also by investors' expectations concerning the downward appraisal of reported earnings which might take place during the time period over which the stock is held. The possible decline in the price/earnings ratio (rise in the E/P rate) between the time of purchase and the sale can turn an otherwise profitable investment into one of substantial loss.

An illustration may serve to clarify the relationship between the earnings/price rate at the time of purchase, the differential rate of growth in expected earnings as between alternative stock purchases and the changing valuations of future prospects which can occur between the time of purchase and sale. Let it be assumed, for example, that an investor has the opportunity to purchase either of two stocks with the following characteristics:

	Stock A	Stock B
Price/share	$50.00	$50.00
Current earnings/share	$ 1.00	$ 3.33
P/E ratio	50:1	15:1
E/P rate	2%	6.7%
Rate of growth in reported net income/share	20%/yr.	5%/yr.

Under the conditions of relative earnings/price rates and rates of growth in net income outlined above, the earnings/price rate of *Stock A* could increase along the schedule indicated in *Table I* and leave the purchaser no worse off than if he had bought *Stock B*, assuming that the earnings/price rate of *Stock B* remained unchanged throughout the investment period and *no dividends* were paid. This schedule of the rising earnings/price rate of *Stock A* represents the pattern of downward market revaluation of the reported earnings of *Stock A* which will just offset the differential rates of growth in the reported net incomes of the two companies. If the earnings/price rate of *Stock A* actually followed this pattern, it would be a matter of indifference to the investor which stock he had originally purchased since the market value of *Stock A and B* would be equal at all times.[1]

(1) As a simplification, it has been assumed that stock A's rate of growth would be mantained at 20% each year with a sudden fall to 5%/yr. at the end of the ninth year. Under these conditions it is, of course, unlikely that the price/earnings ratio of A would actually decline along the lines indicated. The decline in P/E ratio is designed merely to show the maximum drop which could take place without leading to a gain or loss in the purchase of Stock A vs. Stock B.

Table I

Earnings/Price Rates and Differential Rates of Growth in Earnings

End of Year	Earnings/Share		Price/Share		Earnings/Price Rate		P/E Ratio	
	A	B	A	B	A	B	A	B
0	$1.00	$3.33	$50.00	$50.00	2.0%	6.7%	50.0	15.0
1	1.20	3.50	52.50	52.50	2.3	6.7	43.8	15.0
2	1.44	3.68	55.12	55.12	2.6	6.7	38.3	15.0
3	1.73	3.85	57.88	57.88	3.0	6.7	33.5	15.0
4	2.07	4.05	60.78	60.78	3.4	6.7	29.4	15.0
5	2.49	4.25	63.81	63.81	3.9	6.7	25.6	15.0
6	2.99	4.47	67.00	67.00	4.5	6.7	22.4	15.0
7	3.58	4.69	70.36	70.36	5.1	6.7	19.7	15.0
8	4.30	4.92	73.87	73.87	5.8	6.7	17.2	15.0
9	5.17	5.17	77.55	77.55	6.7	6.7	15.0	15.0

The relationship in *Table I* can be clarified by considering the earnings/price rate as the reciprocal of the price/earnings ratio. If the buyer of *A* sells at the end of the third year, for example, the earnings/price rate could increase from 2.0% to 3.0% and the corresponding price/earnings ratio could decline from 50:1 down to 33.3:1 without the buyer of *A* being better or worse off than if he had purchased stock *B;* i.e., the sale price of both stocks will be identical. If the price/earnings ratio declined less severely, the buyer of *A* would have made the correct choice since the superior earnings growth of *A* would have more than offset the decline in market value resulting from the lower price that investors were willing to pay for $1 of reported earnings. Faced with a choice between investment alternatives, the purchaser must weigh the combined outlook for earnings growth and the outlook concerning the manner in which investors will view the earnings prospects of the firms in question at the time of anticipated disposal of the stock.

The accompanying chart suggests the premium which an investor might reasonably pay for growth stocks. The graph shows, for varying investment periods and for varying differentials in the rate of growth of reported net income/share, the price/earnings ratio "multiplier" which can be paid initially for "growth" stocks under conditions in which the price/earnings ratio of the growth stock declines to the market average price/earnings ratio during the investment period. The vertical (y) axis referred to as the "multiplier of market P/E ratio" represents the ratio of an above average price/earnings stock (say 50:1) to the current market average (say 15:1) with the multiplier in this case being 3.3. The horizontal (x) axis scale represents the annual rates of growth in reported net income/share which are expected to be sustained over the particular investment period with 5%/year assumed, for the purpose of illustration, to be the market average rate of growth underlying the 15:1 price/earnings ratio.

Recalling the previous discussion, it can be seen that the circled dot plotted at the intersection of 3.3 on the y axis, and 20%/year on the x axis, falls just below the ten-year investment period curve. This point would fall precisely on the nine-year investment curve as indicated by *Table I*. The differential rate of earnings growth between 20%/year and 5%/year is just offset as far as market value is concerned by the end of the ninth year if the initial price/earnings ratio of 50:1 declines to 15:1. Each curve thus indicates the price/earnings ratio premium (multiplier) which can be paid under varying assumptions of: (a) the length of the investment period during which earnings growth is sustained; (b) the differential rate of growth in expected earnings and, (c) the changing valuations of future prospects as reflected in changing price/earnings ratios; such as to leave the investor in no better or worse a position at the time of liquidation than if he had originally purchased the typical market share selling at 15:1 but growing at only 5%/year.

The chart suggests that the shorter the investment period and the smaller the differential rate of growth in earnings between the selected stock and the market average, the less is the premium which can be prudently paid for one dollar of current earnings assuming other things are equal. Assuming a sustained rate of growth of 30%/annum over a five-year investment period, the purchaser of a stock selling at approximately 45:1 (a multiple of three times the current market average) would just break even relative to an average investment as measured by market value at the time of liquidation if the price/earnings ratio declined from 45:1 to 15:1 during the five-year period. A slower growth rate would be inadequate to offset this decline while a more rapid rate of growth would more than offset the decline in price/earnings ratio from 45:1 to the market average.

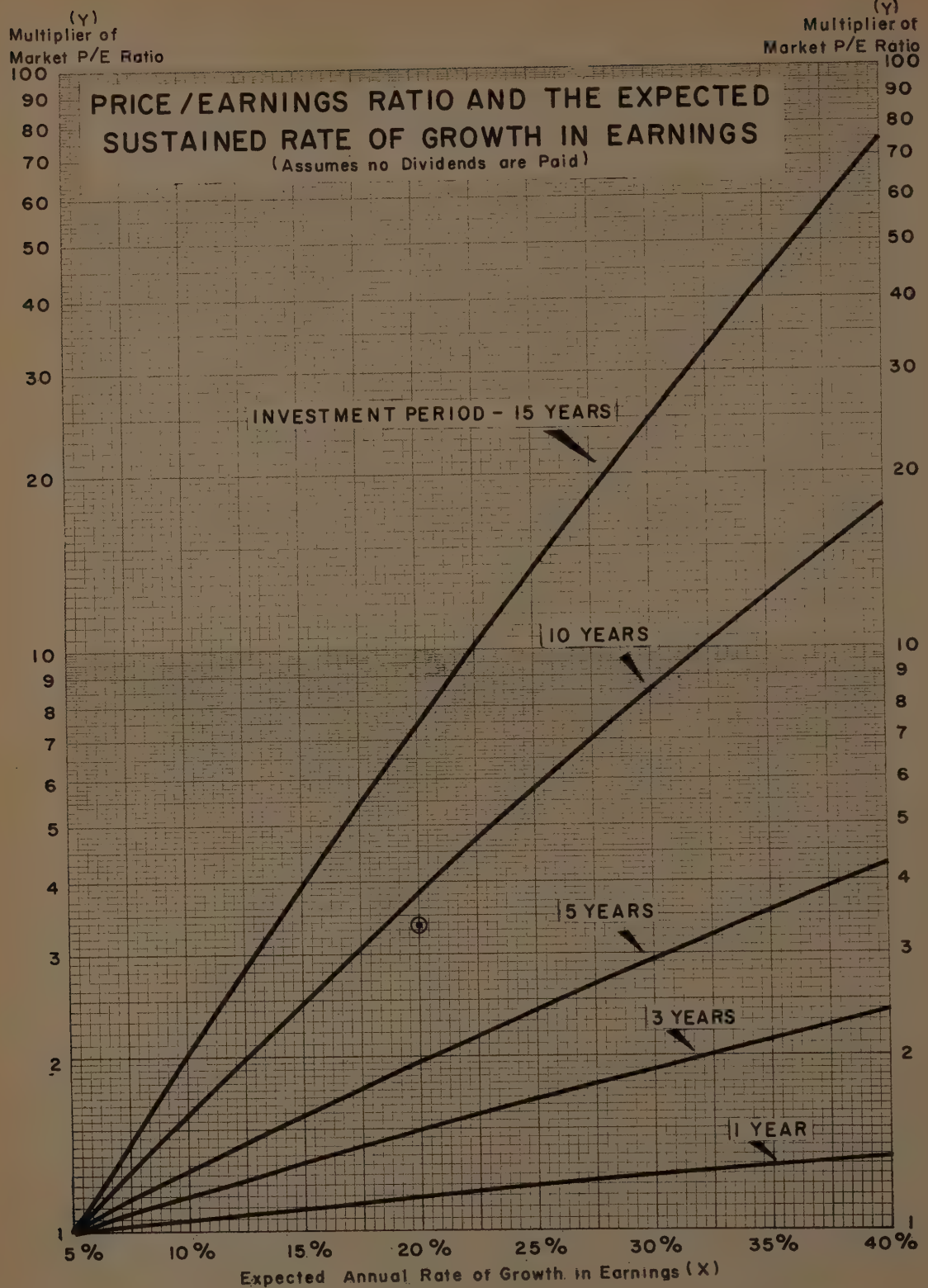
EARNINGS/PRICE RATE AS A MEASURE OF INVESTORS' EXPECTATIONS

The percentage rate computed by dividing reported net income/share by market price likely represents the rate of return investors are expecting only under certain limited circumstances. The earnings/price rate would accurately measure earning power expectation when the following conditions are met:

1. The investor expects no change in earnings over the time during which he plans to hold the security.
2. The investor expects that the earnings/price rate at the time of sale will be equal to the earnings/price rate at the time of purchase.
3. Declared dividends are equal to reported earnings (net income).

Under these conditions the investor is in effect buying a perpetual annuity. Common stocks with these characteristics are not unlike interest-bearing bonds. In the more usual situations, where purchasers are anticipating either an improvement in earnings or a decline in earnings/price rate, or both, the percentage rate arrived at by dividing current earnings to current price is not indicative of investors' rate of return expectations.

An earnings/price rate which is "high" compared to alternatives can result from the awareness on the part of investors that the earnings outlook for the firm is poor rather than from expectations of a high rate of return on investment. The market may have already discounted the unfavorable earnings outlook resulting


(Y)
Multiplier of
Market P/E Ratio
(Y)
Multiplier of
Market P/E Ratio
PRICE/EARNINGS RATIO AND THE EXPECTED
SUSTAINED RATE OF GROWTH IN EARNINGS
(Assumes no Dividends are Paid)
INVESTMENT PERIOD – 15 YEARS
10 YEARS
5 YEARS
3 YEARS
1 YEAR
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
2
1
5%
10%
15%
20%
25%
30%
35%
40%
Expected Annual Rate of Growth in Earnings (X)

in a low price and consequently the high earnings/price rate. A high earnings/price rate can also reflect the substantial uncertainty surrounding the outlook for earnings of a firm and in this situation the investor is unwilling to bid-up the price of the stock too high for fear of miscalculation.

As a practical matter, the investor can never predict with certainty that the earnings/price rate will remain steady or be the same at time of sale as at time of acquisition. Some investors may purchase stocks where the outlook for the rate of growth in reported net income/share and dividends is favorable; others may purchase stocks where they believe that the market will revalue reported earnings upwards. The investor could expect the identical discounted rate of return from each of two stocks even though there were widely different earnings/price rates. He might expect a rapid rate of growth in the low earnings/price rate stock—a situation in which he anticipates that earnings and dividends will catch up to and more than justify the present price. He might expect a high earnings/price rate stock characterized by stability of earnings to increase in value because of a rise in the price. This rise in price would result in a lowering of the earnings/price rate but would simultaneously result in profit—the excess of sale price over acquisition cost. It is impossible to generalize about investors' earning power expectations based on earnings/price rates in market situations dominated by change and uncertainty.

The Cost of Equity Capital

Application of the earnings/price rate to the determination of the cost of equity capital has received considerable attention on the part of businessmen and regulatory authorities.[2] The earnings/price rate has been relied upon as a guide to establishing the lowest rate of return necessary to induce new investors to provide long-term capital and further to determine the profitability expectation of shareholders who are presently supplying the capital available for the firm's use. In the previous discussion it was indicated that the earnings/price percentage should not be relied upon as a measure of investors' rate of return expectations. Neither should the earnings/price rate be viewed as an economically sound measure of the "cost of equity capital."

Cost of equity capital is perhaps one of the most nebulous areas in economics and while the notion of cost of capital is employed rather freely in the literature of economic theory and in the offices of top management, there is no general agreement about the precise meaning of the concept. One of the difficulties arises from the tendency to by-pass the essence of the cost-of-capital problem by proceeding as though physical assets could be regarded as yielding known, sure streams of income in the same manner as bonds.[3] While earnings could be viewed as interest on bonds if the earnings and earnings/price rate in the future could be predicted with accuracy, it is oversimplified and misleading in the real world of economic action to treat the cost of equity capital as if it were the same as the cost of bonded indebtedness.

The cost of equity capital might well be defined as that rate of return percentage which must be earned on incremental investment in order that the market value of existing stockholders' proprietary interest in the firm be neither increased nor decreased. Consequently, the per share earnings and price should be unchanged when considered on a present-value basis; i.e., the present worth of future income to be generated with the incremental investment should be in the same proportion to this outlay as is the present worth of income to the previously outstanding investment. As a simplification, it is assumed that all investment is exclusively financed through equity capital. If all expenditures financed through issue of common stock are invested to yield precisely the rate of return being earned on the already existing investment, then the original shareholder neither gains nor loses—he breaks even insofar as the present value of future earnings/share and correspondingly the price/share are unaltered. The original shareholder will probably seek outside equity money and thus take in partners only if such action appears to be necessary either to prevent the present value of future earnings from declining or if he anticipates that the newly raised cash can be invested in such a manner as to increase the present worth of future earnings/share.

Establishment of an earning power floor below which a company should not invest money may be of critical importance in enabling a management to maintain or upgrade its shareholders' rate of return on equity and to satisfy investors' expectations. The earnings/price rate is a valid measure of the cost of equity capital and expresses investor rate of return expectations only when constancy can be assumed with respect to earnings and the earnings/price rate and when dividends are equal to reported net income. Except under these unique conditions, the earnings/price rate should not be utilized as the minimum acceptable rate of return in project evaluation.

Earnings/Price Abuse Possible

Application of the reasoning that a firm's cost of capital, and consequently that its minimum required rate of return on incremental investment, is reduced as the earnings/price percentage of its stock decreases can lead to an abuse of the earnings/price rate in financial analysis. If it were assumed that a firm has 10 shares outstanding, a price of $10/share, and that earnings/share are $1, the market value of the 10 shares would be $100 and the earnings/price rate 10%. The firm would have to issue two shares in order to raise $20 of new equity capital. Were this same firm's stock selling

(2) Soule, Roland P., The Harvard Business Review, March-April, 1953, p. 36.

(3) Modigliani, Franco and Miller, Merton H., The American Economic Review, Vol. XLVIII, June, 1958, p. 261, "The Cost of Capital, Corporation Finance and The Theory of Investment."

at $20/share with an earnings/price rate of 5%, it would have had to issue only one new share in order to increase its available cash by $20.

It should not be concluded, therefore, that the firm has a green light to invest the newly acquired funds at a lower rate when its earnings/price rate is 5% than it does when the earnings/price rate is 10%. While there would be fewer shares outstanding, among which earnings must be divided, following the equity issue when the E/P rate is 5% (11 shares vs. 12 shares at an E/P rate of 10%), the newly raised cash will have to be invested at a rate sufficiently high to maintain the present value of forecast earnings equal to $20/share compared to only $10/share. The rate at which the firm necessarily must invest newly raised cash to accomplish maintenance of the present value of future earnings/share (i.e., market price), moreover, is dependent on the cash at work in the enterprise rather than market value which is a reflection of the earnings outlook.

According to Federal Trade Commission—Securities Exchange Commission reports, large manufacturing enterprises are earning an average rate of return on equity of approximately 10%/year. Let us assume that the profit prospects of one of these typical firms brightens with the result that the present value of future earnings increases and investors bid-up the market price. If the earnings/price rate declines, therefore, from let us say 7% down to 3% should management assume that it can invest in poorer earning projects than in the past? On the contrary, it is incumbent upon management to attempt to upgrade its rate of return over the 10% earned on equity in the past if investors' expectations are to be realized. Earnings/price rate and the minimum acceptable rate of return on proposed projects tend to move inversely whenever a marked change occurs in the profit expectation of investors.

Regulatory authorities also contradict the expectations of investors and disregard the firm's cost of equity capital when they assume that the earnings/price rate should be relied upon as a basis for establishing the allowable earning power on existing and incremental investment. Companies in which the earnings/price rate is low (where the outlook for future earnings is likely good in relation to present earnings) will be assigned a low earning power and hence the investor will obtain a poorer rate of return than expected. In this case, there will be a tendency for the earnings/price rate to rise since the outlook for future earnings has been impaired. Correspondingly, where the earnings/price rate is high (where the outlook for future earnings is poor in relation to reported earnings) the effect of regulation based on this percentage will be to assign a high earning power to the firm and subsequently a tendency will set in for the earnings/price rate to decline. Application of earnings/price rate as a regulatory device is self-defeating because it automatically operates to: (a) bring about results contrary to investors' expectations; and (b) to bring about a change in the standard itself.

SUMMARY

The earnings/price rate is a valuable analytic device when properly interpreted. It is of primary importance in assisting investors in evaluating stock purchases and is particularly helpful in the difficult analysis of growth situations. Earnings/price rate must be employed cautiously, however, by management and regulatory authorities. Except under the uncommon conditions, when it is valid to consider reported earnings in relation to market value as interest on debt, the earnings/price rate cannot be relied upon as a measure of investors' rate of return expectations. Consequently, the earnings/price rate should not be considered a valid measure of the cost of equity capital nor should it be adopted as the minimum acceptable rate of return standard in project evaluation.

Birth of Wall Street

On March 31st, 1644, Cornelius Van Tienhoven, secretary of the Council at New Amsterdam, tacked an official document to a tree near the fort. The few spectators watched him with concern. Communications from the [Dutch] Government usually meant some new burden or the curtailment of a coveted privilege.

This notice, however, was comparatively inoffensive. It merely directed that a barrier be erected at the north of the settlement, sufficiently strong to prevent the straying of cattle and to protect them from the Indians. All interested persons were "warned" to appear on "Monday next, the 4th of April, at 7 o'clock" for the prosecution of the work.

The barrier's northern line determined the location of what is now Wall Street.—*Bankers Trust Co.*

Steel for automobiles: another area of growth at

NATIONAL STEEL

The automotive industry is now completing one of its biggest years. Production will run about 11% more than in 1959. And the persistent increase in number of families, the move to the suburbs, the growth of multiple car households all point toward a steady and substantial increase in the demand for cars . . . and the steels of which they are made.

National Steel has long been identified with the automobile. The automotive industry is America's biggest customer for hot and cold rolled sheets and strip and our Detroit division, Great Lakes Steel Corporation, has consistently supplied a major proportion of these requirements.

In addition to its dramatic growth as a steel consumer over the years, the auto industry has constantly provided a fertile field for new steel products. Great Lakes Steel and also our Weirton Steel division of Weirton, West Virginia, have worked closely with auto makers to meet this need for the new. Weirton, for example, recently developed differential-coated galvanized steel to solve a special automotive problem, and much greater use of galvanized, in this and other forms, is plainly indicated for the future.

In such ways, we have grown along with the auto industry and we will continue to do so. This is one of the principal aims of our current $300,000,000 expansion program. For Great Lakes Steel, it includes a substantial increase in steelmaking capacity and the "mill of the future"—which will begin operation in 1961 as the world's fastest and most powerful strip mill and the first to have an electronic computer incorporated in its original design. Its assignment is to meet peak demands of the auto industry with the finest quality steel yet produced.

So, automotive steel is another important area of growth in which National Steel Corporation, in cooperation with its customers, concentrates its long experience in steelmaking and its research facilities on exploration of new ways to future progress.

This STEELMARK of the American steel industry tells you a product is steel-made, steel-modern and steel-strong. Look for it when you buy.

Steel

NATIONAL STEEL

NATIONAL STEEL CORPORATION, GRANT BUILDING, PITTSBURGH, PA. Major divisions: Great Lakes Steel Corporation • Weirton Steel Company
Midwest Steel Corporation • Stran-Steel Corporation • Enamelstrip Corporation • The Hanna Furnace Corporation • National Steel Products Company

HIGH FINANCE IN COPPER

by Richard D. Donchian

WITH CHAOS IN THE CONGO continually making headlines, and with the entire African continent in the throes of a native-recognition uprising, the question arises "Will the important copper production from Africa continue without serious interruption?"

African mine output of copper, in aggregate accounts for about one-quarter of total world supplies (see *Figure 1*). And although the Congo mines, grouped together in the Union Miniere Du Haut Katanga, are among the world's richest and largest copper mines, their annual output is less than 10% of world production. *Table* 1 gives a percentage breakdown of world copper mine production and consumption by geographic localities.

The significance of the African situation lies in the fact that African production represents the balance between over-supply and scarcity. World copper production for 1960, based on figures through August, is headed for a new all time high of around 4,500,000 short tons. This is about 250,000 tons above indicated 1960 consumption. which also appears to be making a record high. Assuming that production throughout the rest of the world will not be severely curtailed by labor troubles in Chile, or other disturbances, any sustained interference to the Katanga production would change a clear-cut over supply picture into a decidedly tight supply demand condition; and if serious threats to the Northern Rhodesian production should arise, a pronounced copper shortage could develop.

Elsewhere in the copper world labor contract differences in Chile pose the only other production curtailment threat. On September 30, (before this article went to press) the contract expired between the management and workers at the large Anaconda "Chuquicamata" mine (more than 250,000 ton annual output) and 7,000 workers are on strike. On December 31, the labor contract at the Kennecott Braden Copper Company "El Teniente" mine (just under 200,000 ton annual production) comes up for renewal. Although labor is making increased demands, the Government of Chile is anxious to forestall lengthy strikes in view of the large losses which the ecomony of Chile suffered from earthquakes earlier this year. The prospect of prolonged production-crippling strikes in Chile, consequently, seems rather remote.

Prior to World War II, the United States was a net exporter of copper. In recent years, even though we still produce more copper than any other nation (see *Table* 1) our domestic consumption has expanded so that we must import a small part of our annual requirements. Our position in copper may be regarded as strong, however, in view of the fact that we are virtually the only large free world industrial user of copper which supplies the major portion of its own requirements.

Copper Contributes to Progress

Copper is a venerable commodity. The "ancient red metal," as it is called, is perhaps the earliest metal known and used by man. In the valleys of the Tigris and Euphrates rivers, about 8,000 BC, neolithic man discovered copper, perceived its malleability, and used it as a substitute for stone. The transitional era which followed, prior to the beginning of the Bronze Age around 5,000 BC, is often called the Copper-Stone Age. During this period man began to melt and mold copper, reducing ores to pure copper by fire. The Egyptians ushered in the Bronze Age around 5,000 BC by learning to combine tin with copper to produce bronze. Around 3,800 BC copper and bronze were used in the construction of ships, numerous household objects and works of art. A section of copper pipe

Table 1

Copper—Supply-Demand
By Localities

(Approximate Percentages Based on 1958 Figures)

	Mine Production (a)	Consumption (a)
U. S. A.	27%	30%
Canada	10	3
Latin America	18	2
Africa	21	1
British Commonwealth (b)	4	17
Western Europe	4	27
USSR & Satellites	13	13
Japan	*	5
Rest of World	3	2
	100%	100%

(a) Does not include production or consumption of secondary copper.
(b) Other than Canada and Africa.
* Less than 1%.

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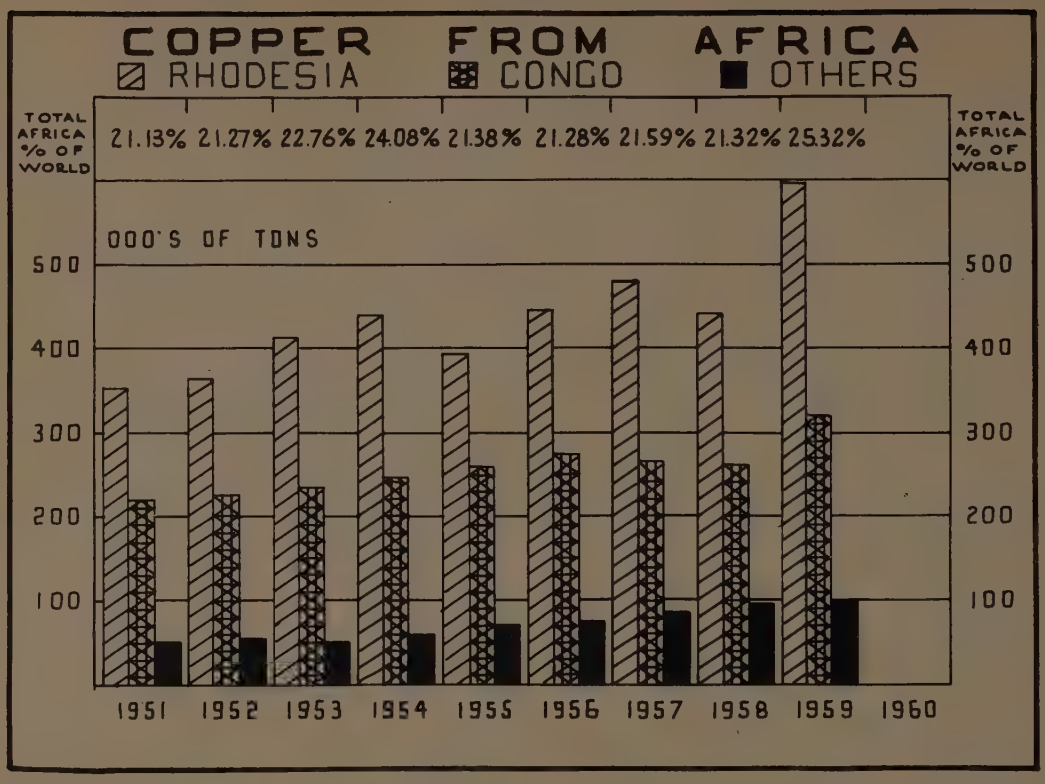
FIGURE I



which conveyed water to the pyramid of Cheops about 3,500 BC is still in excellent condition. About 3,000 BC rich stores of copper were found on the island of Cyprus in the Mediterranean. So prized were these deposits that wars were fought for control of Cyprus, which passed from Egypt to Assyria, to Phonecia, to Greece, to Persia, and to Rome. Copper derives its name from the Roman "aes Cyprium" (Cyprus metal). During the height of the Roman empire copper and bronze were widely used for furniture, household utensils, statuary, architecture, weapons, coins, razors, surgical instruments and even artificial limbs. During the Dark Ages metallurgy fell into decline; but by the ninth century, church bells were being made of bronze. In the Renaissance, churches were roofed with copper, and skilled bronze working in statues and other objects was revived. In Germany during the fifteenth century, the art of printing began with the fashioning from copper of the first engraving plate.

Copper is a very versatile commodity. No other commodity has such a wide variety of properties and uses. Among its more important properties may be listed the following: (1) high electrical conductivity; (2) high thermal conductivity; (3) excellent corrosion resistance; (4) ease of fabrication; (5) adequate tensile strength; (6) high ductility; (7) controllable annealing qualities; (8) good soldering and joining characteristics; (9) suitability for electro-plating, finishing and polishing; and (10) ability to combine easily with many other metals to produce useful alloys—the two most important of which are the brasses (copper zinc) and the bronzes (copper tin).

In America, the copper industry commenced in 1664 at Lynn, Mass. In 1779, shortly after Benjamin Franklin harnessed electricity, Volta built the first electric battery, employing copper as the active element. In 1831, Michael Faraday built the first magneto-electric machine, the forerunner of the modern dynamo and generators which use vast quantities of copper. In 1832, Samuel Morse relayed electric signals over the first telegraph line consisting of some 1,700 feet of copper wire. In 1876, Alexander Graham Bell put the human voice on copper wire, and today the copper used to connect telephones in the United States alone is enough to go around the world more than 5,000 times. After 1878, when Thomas Edison produced the first incandescent lamp, the use of copper as the most efficient and practical conductor of electricity made further strides.

Today, copper holds a prominent place in the vanguard of Space Age progress. It is an important element in missiles, rockets, and space recovery mechanisms. In the fast developing fields of computers and printed circuits, copper is indispensable. Future applications of considerable scope are foreseen in the development of thermo electrics, the fuel cell, and tunnel diodes.

Copper is a valuable commodity. Until the last 10

years the annual production exceeded the production of any other non-ferrous metal. Within the past decade the production of aluminum has picked up so that it is now slightly ahead of copper in terms of tonnage mined. With the price of copper running, on average, about five cents per pound higher than the price of aluminum, the total value of copper output in 1959 was about $2,500,000,000—easily the highest of all the non-ferrous metals.

Pricewise, copper is a volatile commodity. Since the Civil War there have been many wide changes in the spot price of U. S. copper between a high of somewhat over 50 cents per pound and a low of slightly less than 5 cents. (See *Table* 2). Except for the World War II and Korean conflict periods of ceiling prices fixed by Government edict, at 12 cents per lb. from 1941 to 1946, and at 24½ cents per lb. in 1951 and 1952, copper prices have moved up and down over comparatively wide ranges almost every year. *Table* 3 shows annual high and low prices and volume of all deliveries of copper futures traded on the Commodity Exchange (New York) from 1947 through September, 1960.

These exaggerated peaks and dips in the price of copper are caused to a large extent by factors peculiar to mining in general and to copper in particular. Production is difficult to regulate. The capital outlay required to increase copper producing capacity by 100,000 tons annually is estimated to be in the neighborhood of $250 million. Furthermore, it takes three to four years time to complete new major copper producing or refining projects. To some extent, production levels in existing mines can be controlled by lengthening or shortening the work week or by increasing or decreasing the number of mine workers. Such regulation, however, is often difficult in practice. In times of prosperity, competition for labor is high and labor scarcities interfere with decisions to expand output. And in times of oversupply the cost of discontinuing production and keeping mining facilities in a standby condition is much higher than for manufacturing plants.

Table 2

Major Changes in Spot Copper Price—New York (a)

Cents Per Pound, 1860 to date

Civil War	High	55.00
1893	Low	9.00
1907	High	26.25
1911	Low	12.20
1917	High	36.00
1921	Low	12.00
1929	High	24.50
1932	Low	4.90
1956	High	46.00 (b)
1958	Low	25.00
1959-60	High	33.00

(a) Before 1900—Lake Copper, After 1900—Electrolytic Copper.
(b) Foreign Price Reached a high of 55 cents.

Source: American Metal Market.

Table 3

Copper Futures on Commodity Exchange, Inc.

Annual High, Low and Volume All Deliveries

1947 Through September 1960

	High	Low	Volume
	(cents per lb.)		(Contracts)
1947	19.65	17.20	458
1948	24.00	17.20	299
1949	20.00	13.00	474
1950	32.50	14.90	1,343
1951	29.25	25.35 (a)	42
1952	No trading		
1953	29.75	22.65 (b)	1,298
1954	34.70	23.70	1,183
1955	51.35	31.25	1,994
1956	53.25	31.30	3,454
1957	32.65	23.35	4,739
1958	31.25	21.57	36,531
1959	35.35	29.61	92,200
*1960	35.00	27.35	63,120

(a) New commitments discontinued in January.
(b) Trading resumed in June.
* Through Sept. 30.

Source: Commodity Exchange, Inc.

These factors impart a degree of inflexibility to copper production which tends to accentuate the effect upon prices of any changes in demand.

Because of this inflexibility in world supply, relatively small imbalances in the supply-demand picture often produce big price moves. In 1955-56, when demand exceeded supply by about 6%, the world price shot up from 30 cents to 55 cents per pound. In 1957-58 big increases in new mine output, combining with a drop in consumption as a result of lower levels of building construction and automobile production, caused copper supply to rise about 4% over demand, and the world price fell back from 55 to 20 cents per pound.

To the copper industry these wide price changes pose problems: To the trader they present excellent opportunities for speculative profit and/or loss.

The wide fluctuations in the price of copper make it advisable for members of the copper trade, the producers, the fabricators, the ingot makers, the smelters, and the dealers, to hedge their inventories by making off-setting sales of copper futures on the Commodity Exchange and to hedge their requirements by making off-setting copper futures purchases. Until 1958 the volume of futures trading in copper had not been broad enough to encourage good use of the futures market for hedging purposes. Now, with trading actively running at a much higher rate, the Commodity Exchange, Inc., reports that members of the trade—particularly fabricators and dealers—are making much greater and more effective use of the futures market for hedging operations.

Copper Futures Trading Skyrockets

Active trading in copper futures takes place on two exchanges, the Commodity Exchange, Inc. (often called Comex) located at 81 Broad Street in New York, and

FIGURE II

COPPER DEC. 1959

1959 Daily High, Low & Close — Commodity Exchange, N. Y.

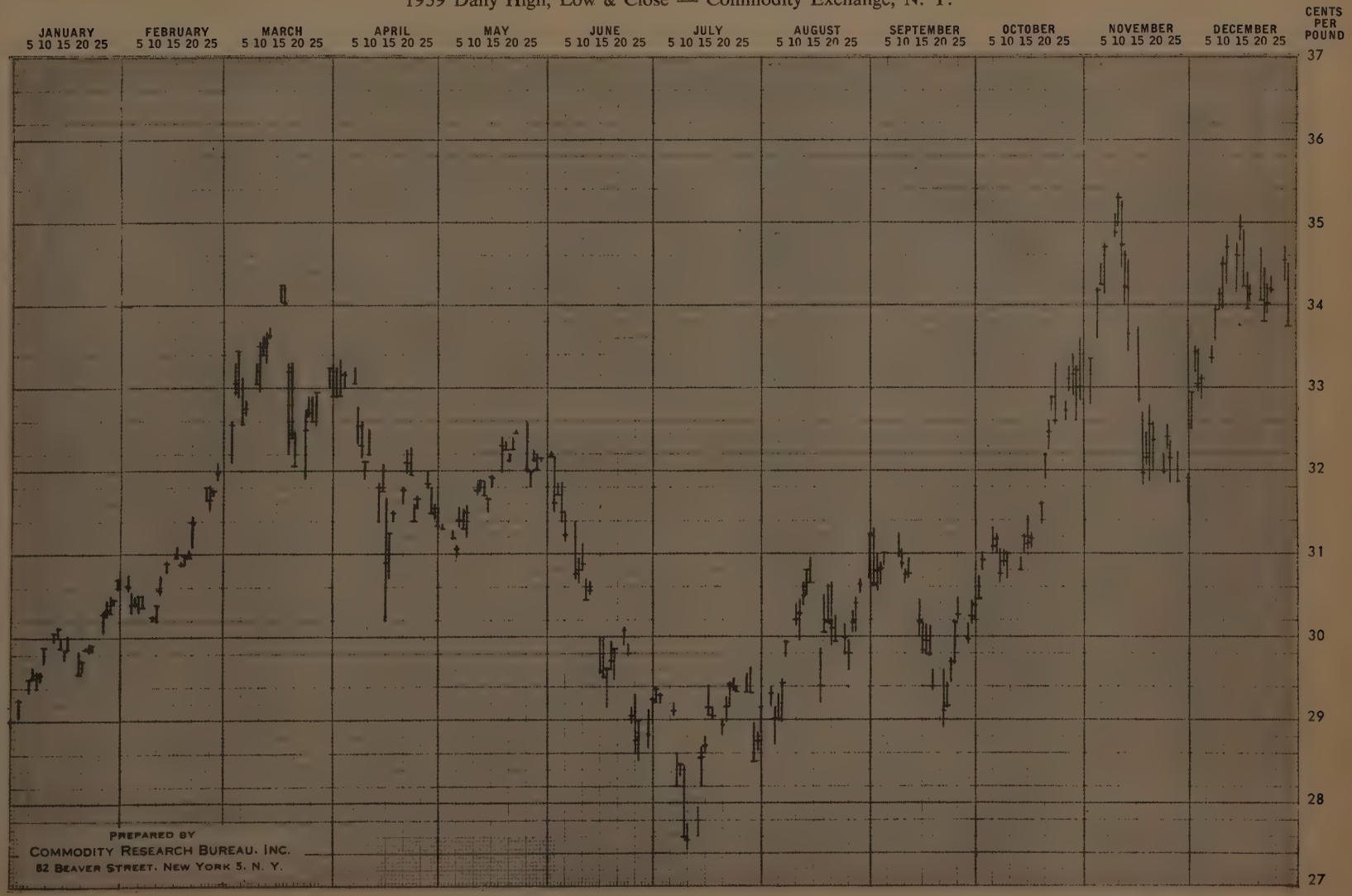


Table 4

COMMODITY FUTURES CONTRACTS

Yearly Average Volume of Trading in Terms of Full Contracts Units

	1955-1956	1958-1959	Percentage Gain	Percentage Loss
Wheat	704,000	684,000		3%
Corn	494,000	395,000		2
Oats	131,000	98,000		37
Rye	136,000	168,000	24%	
Soybeans	997,000	738,000		26
Soybean Oil	135,000	148,000	10	
Soybean Meal	45,000	162,000	260	
Lard (drums)	48,000	16,000		67
Chicago Board of Trade Total	2,693,000	2,412,000		10
Eggs (Chicago Mercantile Exchange)	399,000	375,000		6
Potatoes (N. Y. Mercantile Exchange) (Maine)	148,000	161,000	9	
Cotton	288,000	150,000		48
Wool & Wool Tops	30,000	50,000	67	
N. Y. Cotton Exchange Total	318,000	200,000		37
Cottonseed Oil (N. Y. Produce Exchange)	51,000	57,000	12	
Total all Commodities Regulated by Commodity Exchange Authority	4,059,000	3,463,000		15%
Cocoa (N. Y. Cocoa)	54,000	111,000	106	
Coffee	63,000	48,000		24
Sugar	63,000	119,000	89	
N. Y. Coffee & Sugar Exchange Total	126,000	167,000	33	
Copper	3,000	64,000	2,030	
Hides	12,000	10,000		17
Rubber	56,000	15,000		72
Commodity Exchange, Inc. Total	78,000	101,000	29	
Total Non-Regulated Commodities	258,000	379,000	48%	

Source: Compilation by Association of Commodity Exchange Member Firms.

the London Metal Exchange, located on Withington Avenue off Leadenhall Street in London, England.

In this country copper futures trading commenced in September 1929 on the National Metal Exchange. In 1933, the National Metal Exchange consolidated with three other exchanges, the Rubber Exchange of New York, the New York Hide Exchange, Inc. and the National Raw Silk Exchange to form the Commodity Exchange, Inc.

In most years prior to 1958, the volume of trading in copper futures on the Commodity Exchange has been relatively light as compared to the activity in other commodities (such as wheat, corn, cotton, cottonseed oil, cocoa, rubber, sugar, etc.) Before World War II, the peak of copper trading activity took place in 1939 when 19,810 contracts changed hands.

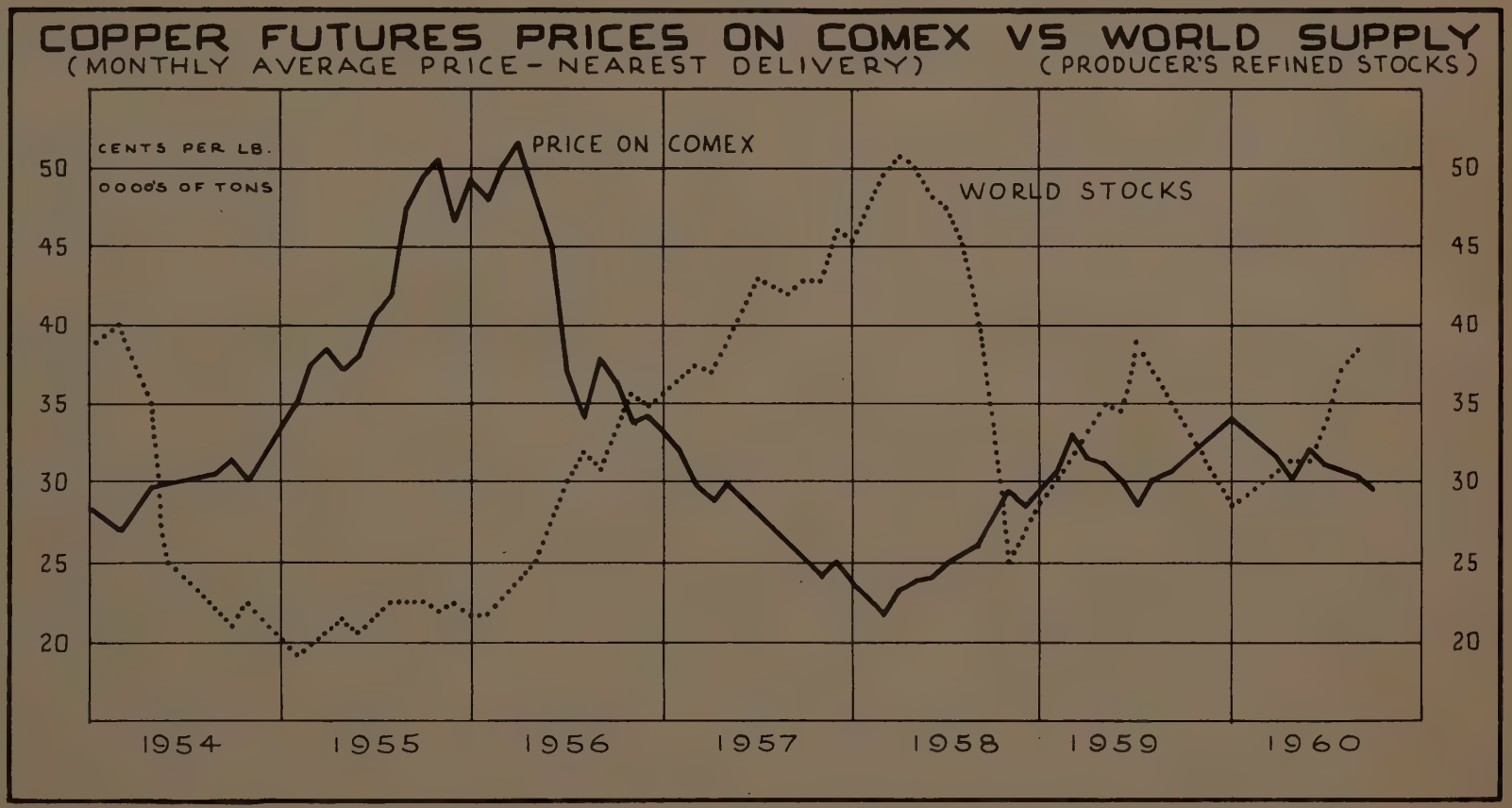
Within the past three years, during which time the activity on many of the commodity exchanges in the United States has dwindled to a small fraction of what it was 10 years ago, trading activity in copper futures has suddenly mushroomed. *Table* 3 illustrates what a spectacular rise has taken place. The 1959 volume, at 92,200 contracts with a total value of $1,531,442,000 showed a gain of more than 150% over 1958. Considering the fact that the heaviest volume during 1959 occurred in the last quarter, when the steel strike and the major U. S. and Chilean copper strikes were taking place, the total activity for 1960, although continuing at a high level, may be somewhat below the 1959 record. The most active single day's copper trading in the history of the Comex, however, took place on June 14 of this year, when volume reached a total 1,325 contracts, or more than the combined volume of the entire three years 1947, 1948, and 1949.

Table 4 compares the 1955-1956 average annual volume of all actively traded commodity futures in the United States with the 1958-59 average annual volume. Copper shows the most outstanding percentage gain.

The London Metal Exchange was founded in 1881. Beginning in 1953, it developed an active trading market in copper futures. The copper contract in London is 56,000 lbs. Trading takes place in two delivery periods, spot and forward. About 60% of the trading takes place in the morning session and about 40% in the afternoon session.

Copper deliverable on the Commodity Exchange, Inc. contract in New York is also deliverable on the London Metal Exchange contract. And since the British and American governments impose no restrictions on sterling exchange in dealings in the metal market, there is a good basis for arbitrage operations between New York and London. Also, when the spread between nearby and distant deliveries gets too wide in either market, trade interests can resort to transfer of deliverable copper to bring about a better balance. An example of this took place in London recently. The spot quota-

FIGURE III


COPPER FUTURES PRICES ON COMEX VS WORLD SUPPLY
(MONTHLY AVERAGE PRICE - NEAREST DELIVERY)
(PRODUCER'S REFINED STOCKS)
CENTS PER LB.
0000'S OF TONS
PRICE ON COMEX
WORLD STOCKS
50
45
40
35
30
25
20
1954
1955
1956
1957
1958
1959
1960

tion on the London Metal Exchange due to local tightness in supply, on July 1, was £8 above the price of forward copper; transfers of deliverable supplies were indicated, and as a result, the disparity between spot and forward was corrected so that on Sept. 30 spot copper in London was quoted at a discount of £1½ under forward. In addition to providing facilities at times for profitable arbitrage operations, copper futures markets, both here and abroad, provide better than average facilities for tax-strategy straddles.

Previous articles in this *High Finance in Commodities* series have pointed out how purchase of one delivery month and the simultaneous sale of an adjacent delivery month (as a straddle or spread operation) can be employed to advantage by investors for (1) converting stock market or commodity market short-term capital gains into long-term gains during a rising price trend; (2) postponing the payment of capital gains taxes from one year to the next; and (3) keeping alive for another five years a capital loss which is about to expire. This subject cannot be covered in detail in the space of this article. Copper futures, however, are extremely well suited for tax straddle operations because there is no crop year or seasonal trend to distort price relationships.

Opportunities in Copper Futures

The unit of copper trading on the Commodity Exchange, Inc. is one contract of 25 short tons, or 50,000 lbs. Every change of 1 point or 1/100 of a cent amounts to $5.00 so that each rise or fall of one cent in the price of copper futures is $500.00. The present exchange minimum margin per contract for non-members is $1,000. A move of 2 cents up or down is all that is needed to double your margin (less nominal expenses of $51.50—$50.00 round turn buying and selling commission and $1.50 clearing fee) if you are on the right side, or to lose your margin if you are on the wrong side and do not limit your loss.

One research group prepares periodic "commodity opportunity" tables by (1) checking the high-low range of individual commodities against the required margin, to measure—theoretically, how many times a trader could have doubled his money if he had been able to buy on the exact low of the year and sell on the exact high; and (2) checking all swings, up or down, of margin extent (2 cents in copper) and determining, theoretically, how many times a trader could have doubled his money if he had bought on the low and sold on the high of every swing of margin extent or greater.

For example, the December 1959 delivery of copper (see *Fig. II*) had a high-low range in 1959 of 790 points, 35.35 to 27.45, or large enough to permit our fictitious perfect trader to make $3,950, or almost 400% on his original $1,000 margin. Hides were the only other commodity to come out with such a high opportunity-range measurement in 1959. Again, the December 1959 delivery of copper had swings of margin extent totalling 3690 points or $18,450 (see *Table* 5). In other words, during 1959, trading in the December 1959 copper futures delivery, it would have been possible, conceivably but hardly realistically, to have doubled one's margin almost 18 times, even after allowing for commissions of $463.50. In 1959 copper led the opportunity-swing measurement list, with hides coming second.

Table 5

December 1959 Copper Futures
(Commodity Exchange, Inc.)

All swings of Margin Extent (200 points) or greater

	Low	High	
Jan. 2	29.05		
Mar. 16		34.25	520
April 20	30.20		405
May 25		32.55	235
July 10	27.45		510
Sept. 1		31.45	400
Sept. 21	28.90		255
Nov. 10		35.35	645
Nov. 30	31.60		375
Dec. 15		35.05	345
			3,690

$18,450, less commissions 9 × $51.50 = $463.50, or $17,986.50 net maximum possibility on one contract.

Source: Commodity Research Bureau.

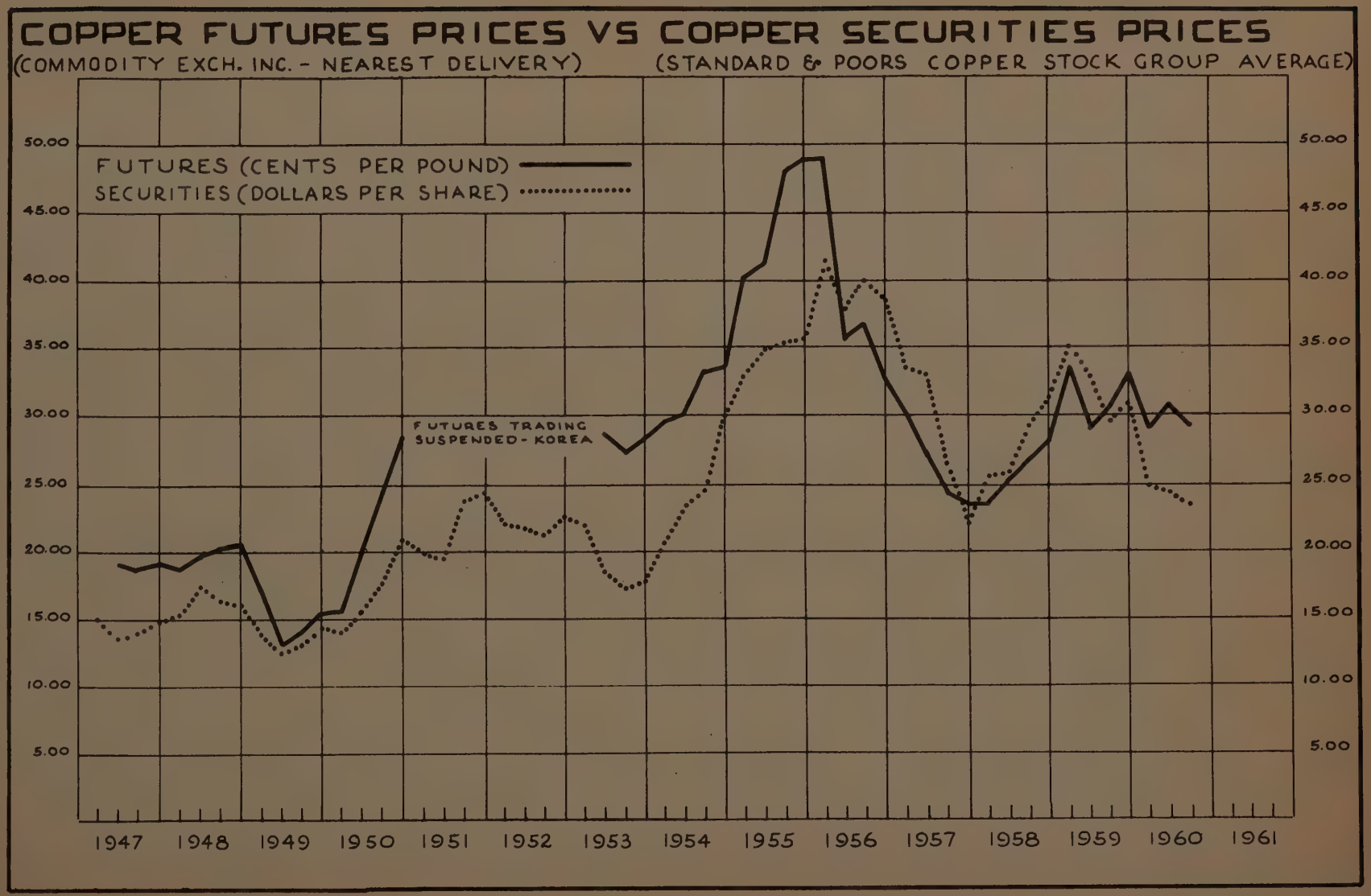
Of course, it is a difficult enough matter actually to make and keep *any* money in commodity trading, and the "commodity opportunity" table comparisons should hardly be regarded as attainable goals. The purpose behind the studies is to measure, in a precise way, the relative profit and/or loss opportunities in the different commodities during an immediately preceding period. And the theory behind the studies is that those commodities which are at the top of the opportunity tables tend, by and large, with some exceptions, to provide the best opportunities in the period immediately ahead, and those at the bottom of the opportunity tables tend, by and large, with occasional exceptions, to be the ones to avoid. During 1960, since June, eggs have led the opportunity tables. Copper has continued fairly high on the list, but not as high as in 1959.

POINTERS AND GUIDES FOR PROFITS

Now that the opportunities in copper futures trading have been demonstrated to be unusually high, the $64 question arises: "How can I trade in copper with a better than even chance of coming out ahead, consistently on balance, every year?" It is probably safe to say that there is no absolutely foolproof way to make consistent annual profits from trading in copper or any other commodity—or if someone does have a foolproof method, he is not likely to reveal it. There are a few pointers and guides, however, which may prove helpful to you in your attempts to trade copper profitably. Three such observations are submitted below.

1. There is a high degree of inverse correlation between changes in the world supplies of copper and changes in the price of copper. *Fig. III* depicts monthly world stocks on hand of copper as compared to the

FIGURE IV


COPPER FUTURES PRICES VS COPPER SECURITIES PRICES
(COMMODITY EXCH. INC. - NEAREST DELIVERY)
(STANDARD & POORS COPPER STOCK GROUP AVERAGE)
FUTURES (CENTS PER POUND)
SECURITIES (DOLLARS PER SHARE)
FUTURES TRADING SUSPENDED - KOREA
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961

price of the nearest futures delivery. The stocks on hand curve appears, at times, to register its turns slightly ahead of the price curve. The monthly figures on stocks on hand, at the end of any given month, are available about the tenth of the following month. In practice it seems to work out rather well to buy copper when stocks on hand show a decline of at least 40,000 tons from a previous high point, and to sell copper whenever they show a 40,000 ton increase.

2. There is a surprisingly high degree of correlation, on a long-term quarterly basis, between the price of copper and the average price of copper company common stocks. (See *Fig. IV*)

In the comparison shown on the chart, copper futures prices reveal no reliable "lead" over, or "lag" behind, copper security prices. The parallel of the two curves is so remarkably close, however, that it leads to an interesting common-sense conclusion. Admitting that stocks of leading copper companies are often bought and held for investment purposes, those who buy them as a speculation, to make intermediate term profits, would do far better to buy copper futures instead. For instance, in September, 1953, using the present stock market margin requirements of 70% it would have cost about $12,500 (70% of 1,000 X 17½) to buy 1,000 shares, on average, of copper stocks. Two years later, with the copper stock average at 35½ ($35,500) the profit would have been $18,000 for a gain of 144%. In copper futures, using today's margin of $1,000 per contract (the margin in 1953 was only $800), one could have bought 12 contracts of copper futures at 27½ cents per pound with a margin deposit of $12,000. By moving the futures position forward, at small buying and selling commissions which would have been more than off-set by the fact that the nearby deliveries tended to command higher prices than the distant deliveries, at the end of two years, with the futures price at 48 cents per pound, the profit would have been 20½ cents, or $10,250 per contract x 12 contracts, for a total of $123,000 or more than 1000%. A position of as little as 2 contracts (margin $2,000) would have made a greater profit than the $12,500 position in copper stocks.

It should be kept in mind, of course, that the higher profit potential in copper futures is coupled, inevitably, with a higher degree of loss risk. It is, therefore, advisable to investigate more carefully before taking a position in copper futures and to be willing to protect one's capital by employing stop loss orders to limit risks.

3. Because copper futures enjoy wide price movements, one can trade in them, employing a trend-following loss limiting method, and have an extraordinarily good chance of making a net profit, on balance, every year. One rather simple, easy to follow, automatic trend-following method which tends to produce good results is submitted as follows:

(a) Whenever the price exceeds the highs of the two preceding calendar week's ranges, buy (and cover shorts if you have previously sold).

(b) Whenever the price falls below the low of the two preceding calendar week's ranges sell, and sell short.

(c) One exception to (a) and (b) above is advisable; namely, if the extreme high or low of the two preceding weeks comes on Friday—or the last trading day of the two weeks if the market is closed on Friday—and the first trading day of the third week is about to give a buy or sell signal by exceeding the Friday extreme, do not take action unless the Friday extreme is exceeded by 20 points or more.

This method is undeniably crude and over-simplified. Most purchases and sales are made on a so called "forcing technique", on stop buy orders in the midst of rises and on stop sell orders in the midst of declines, so that every time a move is made it tends to look foolish, in that it could have been done at a better price earlier. There are some refinements to the method, and some combinations of the method with supply-demand fundamental factors, which can improve the performance somewhat but these are beyond the scope of this article. The method, even in its simplified form, despite all its failings, has the unique merit that "it works".

The simple position reversing method outlined above, applied to a single contract of the December 1959 delivery of copper (*Fig. II*) not using profits to increase positions, and closing out the commitment on November 30, the end of the month before expiration, would have produced the following result:

Date	Buy (a)	Sell (b)	Points Gain	Points Loss
Jan. 26	30.20			
March 20		32.05	185	
May 18	32.00		05	
July 2		31.75		25
July 22	29.45		230	
Sept. 14		30.45	100	
Oct. 1	30.55			10
Nov. 17		32.70	215	
Nov. 30	31.90		80	
			815	35

Net gain 780 points × $5.00 = $3,900 less commissions of $412 (8 trades × $51.50) = $3,488, on margin of $1,000.

Applied to the December 1960 delivery, the results for one contract through Sept. 30 are as follows:

Date	Buy (a)	Sell (b)	Points Gain	Points Loss
Nov. 16, 1959		30.20		
Dec. 28	30.00		20	
Jan. 29, 1960		30.05	05	
April 7	28.25		180	
April 28		27.90		35
May 5	28.45			55
Aug. 10		29.80	135	
Sept. 30	(28.80)(c)		100	
			440	90

Net gain 350 points × $5.00 = $1,750 less commissions of $360.50 (7 trades × $51.50) = $1,389.50.

(a) and cover short sales.
(b) and sell short.
(c) short position taken on August 10, still remains in force. September 30 close is used only for tabulating result.

Of course, profitable results in any past period cannot provide assurance of attaining similar profitable results in the future; nevertheless, it may be of interest to know that this same simple method, applied consistently, has produced a net profit in almost every delivery of copper traded on the Commodity Exchange, Inc. in the last five years.

LONG TERM OUTLOOK

"Based on estimated known reserves it has been determined, at the current rate of consumption of approximately 4 million tons a year, the free world has available a conservatively estimated 50-year reserve of copper"—From Copper & Brass Research Association booklet, *Cornerstone of Civilization.*

It should be noted, also, that in copper mining history to date, new deposits and new technological methods of extracting more metal from existing ores, have added to the world's copper reserves at a rate at least equal to consumption, so that, if this discovery rate continues, no extreme shortage of copper appears probable even 100 years hence.

In the United States, copper usage is increasing rather slowly, so that it is estimated that, by 1965, consumption of new copper reflecting population growth will have risen from slightly over 1,000,000 to about 1,200,000 tons. Elsewhere in the world, however, industrialization is taking place at a more rapid clip. Copper consumption outside the United States, by 1965, is projected in the neighborhood of 3,500,000 tons, or roughly 30% above the current rate. Present expansion rate of production facilities is just about in line to balance projected world wide demand over the next five years. Our expectation of long-term price stability or price rise, therefore, is not predicated upon copper shortages but is based on the long term world-wide trend toward inflation and currency depreciation.

SHORT TERM OUTLOOK

Over the near term, into 1961, barring a shift from "cold war" to a "shooting or all out nuclear war," and excluding the possibility of major production curtailments in Africa or South America, the price of copper futures at slightly over 29 cents per pound for the nearest commodity exchange delivery, seems likely to decline irregularly toward the 25 cents level.

In conclusion, for those in a position to assume normal business man's speculative risks, trading in copper futures can be exciting fun; can be decidedly profitable when undertaken with a willingness to "cut losses short and let profits ride"; and can be used to advantage to help reduce or defer capital gains taxes by entering into properly guided tax-strategy straddles.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF

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1. The names and addresses of the publisher, editor, managing editor, and business managers are:

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Managing Editor, WARREN BURNS,
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2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

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3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are:

None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required by the act of June 11, 1960 to be included in all statements regardless of frequency of issue.) 12,000.

WARREN BURNS,
Managing Editor

Sworn to and subscribed before me this 22nd day of September, 1960.
(SEAL)

MARGARET WILKEN
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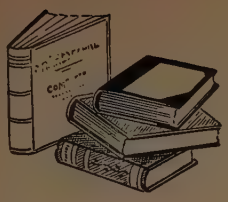

BOOKS for ANALYSIS

CHECKLIST FOR BUYING STOCKS. By Gerald M. Loeb. New York: Simon & Schuster. 13 pages. $2.00.

Reviewed by FRANCES HAIDT

Mr. Loeb's pertinent comment on his new book is, "Analysts will love it or hate it, depending on who they are I suppose." To some extent, there may be a normal amount of professional resentment over a colleague's "cashing in" on an "oversimplified expose" of the "tricks of the trade." Easy success naturally evokes a "Why didn't I think of it first;" similarly, effective writing "Everyone will think he too can be an Analyst." These feelings notwithstanding, the practicing Analyst, especially if affiliated with a brokerage house, will indeed love it.

Intended as a supplementary tool to the author's *The Battle for Investment Survival,* Mr. Loeb's new *Checklist* will prove a primary tool in the Financial Analyst's battle for survival, with the plethora of unsophisticated customersmen and the hoardes of second-guessing customers who crowd our boardrooms.

In only 13 pages of text, Mr. Loeb clearly and concisely spells out the critical points to be reviewed in investment decisions. He not only defines balance sheet items, but more important, explains the reasons why these financial facts and formulas contribute to an understanding of a company's potential. The seemingly simple device of an outline guide, forces the investor to select from these various factors the single and most important influence on the future prosperity of the company under consideration. This—*the ruling reason*—dictates the stock transaction: why the security should be bought, and (which Analysts are oft to forget) when a commitment should be closed.

While the determining data may not be readily available to customers, the reference material is at the disposal of customersmen. What a blessing if the registered representatives could be educated to refer to the *Library* instead of the *Research Department.*

As we know, the amassing and compilation of statistics are not enough. A host of intangibles also enter into our final evaluations. It is in this area, that the experience, and judgment of the Analyst will be appreciated for the professional art that it is.

Those Financial Analysts who use Mr. Loeb's *Checklist* to organize their own thoughts will find it a handy aid to better report-writing. For example, I checked out a company I recently recommended against this list and found that the ruling reason (which stood out most starkly) was indeed the lead sentence in my five page write-up.

Whether or not, as an Analyst, you would choose to add or delete an item or two, you will recognize the *Checklist* as a valuable contribution to the climate of intelligent investment. In the highly selective market ahead of us, sane and sober thinking must take over from the speculative enthusiasms of yesterday.

(Mr. Loeb is a general partner of E. F. Hutton & Co., and a member of The New York Society of Security Analysts).

* * *

THE NEW INFLATION. By Willard L. Thorp and Richard E. Quandt. 228 pages. New York; McGraw-Hill Book Company, Inc. $5.00.

Reviewed by DONALD H. RANDELL

The frantic gyrations in the world price of gold and the monetary policy overtones of the political debates so recently concluded, have combined to focus the public's attention on the vital but generally misunderstood topic of inflation.

This book, eminently readable despite the intricacies of the subject, is based in part on 1,800-odd pages of testimony presented to the Joint Economic Committee of Congress on the "Relationship of Prices to Economic Stability and Growth." Authors Thorp and Quandt, economics professors at Amherst and Princeton, respectively, prepared the text after participating in lengthy discussions on the subject of inflation with a panel of outstanding economists.

The New Inflation challenges many of the time-honored platitudes about the causes of and the economic consequences of changes in the price level. While once inflation was regarded as the result of too much money chasing too few goods or services, it is now recognized that price rises can be affected not only by demand-price factors, but also by cost-push (sic) elements in the body economic (or political).

The book contains a readable definition of the quantity theory of money with its Keynesian overtones; a reference to the "a little inflation is beneficial" school of thought, identified with Galbreath (but not by name); a description of the demand-dampening Pigou effect; an exposition of the role of the Federal Reserve Board in implementing monetary policy.

While the authors seem disinclined to jam any conclusions down the throat of the reader, they do seem to present inflation as a general tax on the people through the reduction in value of whatever purchasing power a person may have and point out that government, the greatest debtor, seems to be the major beneficiary of the debt-lightening effect of the erosion of monetary value. They point out quite properly that the basic conflict in this day and age seems to be between maintaining the fiscal stability that benefits the prudent and the thrifty, or permitting enough inflation to avert serious unemployment and stimulate economic growth.

The catch, of course, in this theory being the hairline distinction

necessary between the beneficial stimulation of a drink or two before dinner and the ultimate sodden insensibility of an habitual drunk.

It seems to this reviewer that his earliest exposure to the basic dilemma of the pros and cons of creeping inflation was somewhat obliquely posed in Aesop's Fable of the Grasshopper and the Ant. There may not be so many more grasshoppers now than there used to be, but they do seem to be chirping a lot louder.

(Editor's Note: Financial Analyst Journal readers will recall that a 1953 forecast by this reviewer was reproduced in our August 1959 issue. The article predicted an intensified conflict with Russia, and stated that due to the inevitability of inflation that would accompany the struggle, the ownership of bonds was more risky than owning well-selected common stocks. At the time the Dow stood at 278).

* * *

SOVIET STATISTICS OF PHYSICAL OUTPUT OF INDUSTRIAL COMMODITIES — Their Compilation and Quality. By Gregory Grossman. Princeton, N. J.: Princeton University Press, 1960. 151 pp. $4.50. (A study by the National Bureau of Economic Research.)

Reviewed by PHILLIP H. LOHMAN
University of Vermont

A high Russian official was asked shortly after 1945 as to whom he considered to be the most important person in Russia. His answer: "The record-keeper." This is not surprising. Jacob Fugger's chief accountant was quite right in calling bookkeeping a "wealth-creating art." Moreover, in a command economy, in contrast with a free market economy, there simply cannot be any planning without proper record-keeping and statistics.

The great contribution to economic literature which University of California Economist Gregory Grossman is making, in this scholarly study, is that he is putting "the reliability and general usability of Soviet statistics of the *physical* output of industrial commodities" under a magnifying glass. He casts aside the contention, allegedly made by Red managers to returning prisoners of war, that "basically everything concerning our figures is sheer manipulation to achieve confusion; their handling is a science in itself." On the other hand, he feels that whatever distortion exists does not prevent the use of the published consolidated figures for entire industries without losing a definitely ascertainable relation to reality.

The author's contentions are richly documented by footnotes based on primary and secondary sources, and there is seemingly little reason to assume that the Russians have greatly improved their statistical problem since 1955, the last year with which the study deals. Russian literature is a fertile hunting ground for the student looking for managerial and/or employee connivance.

Mr. Grossman estimates that over three million people are engaged in statistical and record-keeping work and there is seemingly great room for mechanization in this area. He calls industrial reporting "extraordinarily comprehensive" and speedy. The due dates for regular reports are extremely early.

The Russians are very much concerned with the reliability of their industrial output data. Mr. Grossman says that this problem seemingly will be with them for a long time to come. Some, no doubt, can be overcome by more serious efforts to mechanize computation. Other difficulties are not so simply dealt with. The prevalence of incentive pay for the Soviet worker (triple base piece rate if basic work norms are exceeded in the coal industry) induces him to write up physical output in order to raise his earnings or benefit from such other intangibles as better housing, vacations, decoration, etc. Such writing up of output is, of course, with the connivance of supervisory personnel. In continuous flow production this practice is much more difficult than in lot or batch production where the foreman signs the work order.

The real "boost" to Soviet output comes from management where, according to Professor Grossman, "the incentive to write up output must be very strong . . . that management does so respond, though by varying degrees and in diverse ways, cannot be doubted by anyone familiar with

the relevant literature." Red, like white, executives want to earn their bonus. With quotas assigned to them, managerial ingenuity asserts itself. If the quota for nails is in numbers, only small nails are made. When the basis was changed to weight, only large nails were made. If the plan is expressed in money, whatever favors biggest value will then be made. If wool cloth is measured in linear meters, its width averages 106 cm., compared to a technical optimum of 142 cm.

Write-downs of output, too, occur. Sometimes this is done to cover up pilferage and theft, or to save management's neck by ensuring a safety factor in future plan fulfillment. Production for a plant's own use may not be reported to assure that these supplies will stay in that plant. A tremendous "togetherness" seems to develop; Mr. Grossman calls it a "web of mutual involvement" between plant managers and local and regional party and government officials. Some are caught and severely punished. But self-interest is strong, and when the heat is on one aspect, often "chiseling" can be done some other way. No doubt, the reader of this book will give the Russians credit for inventive genius to provide flexibility in a military economy. Result: "The Soviet enterprise is a major source of distortion in Soviet industrial output statistics." But the author gives the Soviet Government a pretty clean bill of health. It does not deliberately falsify published data, although suppression probably occurs when production falls too far short of the target.

When the other publications on Soviet economic growth appear, the reviewed work is the first, they will undoubtedly constitute a substantial addition to knowledge. Mr. Grossman has most ably started off the series.

* * *

THE GREAT ORGANIZERS. By Ernest Dale. New York, Toronto, London: McGraw-Hill Book Company, Inc. 277 pages. $5.95.

A new insight into high level management of business, through profiles of managerial geniuses who solved organizational problems of DuPont, General Motors, Westinghouse, and National Steel, is presented in this newly published book. It describes methods used, compares management theories, points out fallacies, and presents practical material on understanding corporate organization.

The book uses actual case histories to develop criteria of action applicable to corporations with comparable problems and conditions. It gives profiles of the "great organizers" — the executives who transformed DuPont from a "one-man" organization on the verge of being sold, to one that utilizes the skills and knowledge of many; those who saved General Motors from potential bankruptcy, and laid the foundation for its present success; and those who successfully decentralized Westinghouse. Results of this decentralization are discussed, as well as the immediate, short-term, and long-term effects on expenses and profits that can be expected by a company contemplating similar action. Also described is the work of the founder of National Steel, whose organizational plans were so advanced that no reorganization was necessary for several decades.

Finally, the book considers the widely promoted concept that management is not primarily responsible to stockholders, *but is rather* an arbiter among employees, customers, suppliers, and stockholders. The dangers and the legal implications of this development are discussed, and possible solutions to the dilemma are suggested.

The author, Ernest Dale, is a consultant to companies both here and abroad. He is also a director of several national and international companies, and has assisted in numerous reorganizations of large and small firms. He is the author of many articles and books in the business field.

* * *

THE RESEARCH REVOLUTION. By Leonard S. Silk. New York, Toronto, London: McGraw-Hill Book Co., Inc. 244 pages. $4.95.

"For the generation that felt and still vividly remembers the full impact of the great collapse of 1931, the economic problem was how to avoid depression; today, however, it is how to achieve a satisfactory rate of growth," says Wassily W. Leontief in the introduction to this new book.

In the book, Author Silk, senior editor and economics editor, *Business Week,* discusses the impact on our economic growth of systematic technological innovation through scientific advance. How this revolution is changing American society, the structure of industry, and the nature of the labor force is described. Its influence as the critical

element in the international balance of power is also covered.

The book gives an account of fundamental changes that are taking place, explaining the present and future implications for natural economic policy and for business policy. Stressed is the regular investment that U. S. industry is making in knowledge, and its importance as a key to continuous economic growth. How the research revolution has worked in a major industry is shown with concrete evidence from the field of electronics.

Consideration of advances in the economic theory of growth, drawn particularly from the work of Sir Roy Harrod, Professor Evsey Domar, and Professor Simon Kuznets —development of the economic side of the "protracted conflict" described by Robert Strausz-Hupe and others—and projection of the trend of research and development by U. S. industry, government, and the universities in the decade ahead contribute to this book's picture of the research revolution and its effect on our economic life.

THE STATESMAN'S YEAR BOOK. Edited by S. H. Steinberg. New York: St. Martin's Press, Inc. 1,700 pages. $9.50.

This book is now in its ninety-seventh year, having an unbroken tradition going back to the time of the Crimean War and the American Civil War. In addition to the usual information on every topic of interest to politicians, statisticians, economists, geographers, journalists, businessmen, teachers and students, the 1960-1961 edition contains the following new features:

—Maps of the Federation of Malaya and of the State of Singapore.

—A map featuring the World Refugee Year, showing the distribution of refugees, what has been done for them so far, and what still remains to be done.

—Diplomatic representatives and the staffs of the embassies and legations of the U. S. A. in every foreign country, and of foreign countries in the U. S. A.

—The political, constitutional and administrative re-arrangement of the French Community, its member states and dependent territories.

—Latest statistics on the economic and military organization of the U.S.S.R.

—Information on the progress of the Federation of Rhodesia and Nyasaland, the Federation of Malaya, the West Indies and the new states of Singapore and Cyprus.

—The incorporation of Hawaii as the 50th State in the U. S. A.

* * *

THE ART OF PERSUASIVE TALKING. By Lynn Surles and W. A. Stanbury, Jr. New York, Toronto, London: McGraw-Hill Book Co., Inc. 283 pages. $4.95.

With the right kind of promotion this book could well become the "How to Win Friends and Influence People" saga of this generation. But even for those to whom Dale Carnegie is no stranger, "The Art of Persuasive Talking" is an excellent reminder that the "do under others" philosophy continues to be top advice.

And certainly the Financial Analyst, who is constantly in personal contact with captains of industry, and related fields, might pick up a pointer here. But, on the other hand (and in all fairness to Authors Surles and Stanbury and their publisher), a re-reading of Dale Carnegie's legendary "How to Win Friends and Influence People" would serve the identical purpose.

However, each generation likes to have its cake re-iced, even though it may be the same cake. No harm done as good advice is always basically sound. But for this reviewer the most interesting portions of the book are the cleverly-drawn caricatures by Robert Glaisek.

* * *

VITALITY IN A BUSINESS ENTERPRISE. By Frederick R. Kappel, president of American Telephone & Telegraph Co. McKinsey Foundation Lecture Series, sponsored by Columbia University's School of Business. New York, Toronto, London: McGraw-Hill Book Co., Inc. 102 pages. $4.00.

In this newly published book Mr. Kappel sets forth practical principles of managing a business successfully for the long run. With penetrating insight, the author pinpoints forces of decay that can undermine a currently successful enterprise, suggests how to deal with them, and shows why management must set goals that stimulate people to strive beyond the level of present abilities.

Mr. Kappel explores the concept of business vitality, and reveals the actions and conditions that bring it about. He tells what a manager must do to nourish vitality and attain a strong, creative, responsive organization that will endure. Given high priority is the promotion of a strong feeling of ethical responsibility. The assignment of jobs that tax ingenuity from the beginning; proper delegation of responsibility; provision of training in formal or on-the-job courses; and the matching of a man's ability and interests with his duties are among the other essential elements that Mr. Kappel fits into his concept of business vitality.

In Memoriam

HOLLISTER V. SCHENCK

Hollister V. Schenck, 72, a partner in Bowles, Andrews & Towne, died from a heart attack at Lake Como, Italy, on September 23. Before joining Bowles, Andrews & Towne, he was investment vice president and member of the board of directors of Life of Virginia. Mr. Schenck served two terms as president of the Virginia Chamber of Commerce and was a board member of Southern Bank & Trust Company and Retreat for the Sick Hospital. He was past president of the Virginia Cruise Corporation and former chairman of the Richmond Sinking Fund Commission. Mr. Schenck was an elder of St. Giles Presbyterian Church and a member of the Presbyterian Board of Christian Education. He also served as the first president of the Richmond Society of Financial Analysts.

* * *

H. R. GREENWAY

Harry R. Greenway, 61, Omaha investment man, died Aug. 22 at a local hospital after a short illness. He was resident manager of Dean Witter & Co. and a member of the Omaha-Lincoln Society of Financial Analysts.

A native of Fairbury, Nebraska, he attended Grinnell College at Grinnell, Iowa and Graceland College at Lamoni, Iowa before entering military service in World War I.

He was an officer in the United States National Trust Company for many years before founding his own investment firm, Greenway and Company. The Greenway Company was sold to the Central Republic Company of Chicago in 1947 and this company was sold again in 1957 to Dean Witter & Co. A bachelor, Mr. Greenway is survived by two brothers, William T. of Long Beach, Calif., and George V. of Evansville, Wis., and two sisters, Mrs. Eva Stark of Long Beach and Mrs. Cecile Peterson of Jackson, Minn.

* * *

CHARLES W. TAYLOR

Charles W. Taylor, 31, a member of The Montreal Institute of Investment Analysts, was accidentally shot and killed by his hunting guide Oct. 3. Mr. Taylor had been employed by Sun Life Insurance Co. of Canada.

During the 1959 annual convention of The National Federation of Financial Analysts Societies, Mr. Taylor acted as arrangements committee chairman and added scores of analysts to his list of friends. A graduate of the University of Vermont, he leaves his wife, the former Diana MacCallum Forman; a daughter, Cynthia Meredith; a son, Christopher Charles; and his mother, Mrs. Seth C. M. Taylor.

He was a member of the Masonic University Lodge, the Royal Montreal Curling Club and the Royal Montreal Golf Club.

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ALBERT C. JAMES

Albert C. James, former dean of Adelbert College and professor emeritus of banking and finance at Western Reserve University, died Oct. 28. He was a member of The Cleveland Society of Security Analysts.

The deceased, author of numerous articles in the business and financial fields, is survived by his sister. His late wife was the former Elizabeth Preston of Boston. He was a member of the American Association of University Professors, Delta Sigma Pi, and the Harvard and University Clubs.

The National Stock Exchange

The National Stock Exchange (14th in the United States and 3rd in New York) has been approved by the Security Exchange Commission. Lawrence H. Taylor, a partner of Sirota & Company, was named as chairman. Membership in the new exchange will be limited to the 400 brokerage firms now holding seats on the Mercantile. Companies listing their stock on the National must have a net worth of $1 million, 500 stockholders, and 150,000 shares outstanding. Trading on the National is expected to commence early in 1961.

Foreign Investments Grow

Foreign investments of the United States approximate $65 billion, according to official reports from Washington. And of this figure it is estimated that around $45 billion constitute private investments. The bulk of United States foreign investments are in long-term obligations, while private American investors hold $41,152,000,000 of long-term foreign assets.

Commenting upon the flow of gold reserves from the United States, this fall, one well-informed New York banker termed it "hot money" which flows to areas with the highest interest rates. Moreover, yields have been declining in the U. S., but they have reached all-time highs in Europe.

New Stock Listings

New common stock listings on the New York Stock Exchange for the first nine months of 1960 equaled the largest for any full year since this series of records has been kept. The admission of 20 new common stocks, in the third quarter, brought the total to 50.

N. Y. Stock Exchange To Tighten Rules

Keith Funston, president of the New York Stock Exchange, has announced that the Exchange is developing a three-part program to strengthen training and qualifications of Exchange registered representatives serving the public. At the same time, he called for higher standards of training for people handling customers' accounts throughout the securities industry.

Regarding the Exchange's program, Mr. Funston said it includes development of new and more comprehensive examinations by a national education testing service. He said it is expected that the new examinations will be ready early next year, and will be administered at testing centers throughout the country.

As a result of Exchange studies, the Stock Exchange plans to make available to individual states early next year a basic examination for use with those personnel not covered by the industry's own testing mechanism. This test will cover the essential elements that everyone handling public accounts should master.

Also In This Issue . . .

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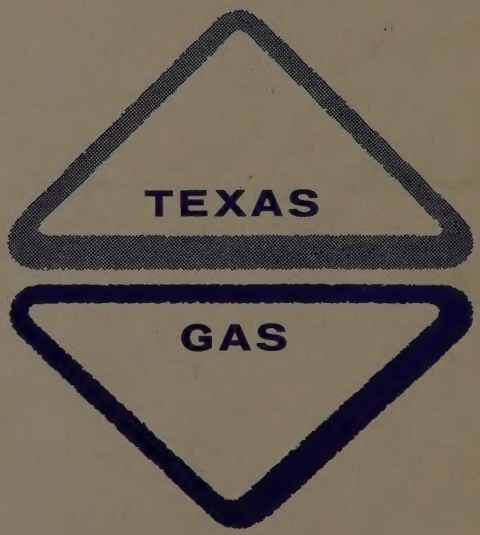

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